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F. W. Reichelderfer, Chief

MONTHLY WEATHER REVIEW

FEBRUARY 1942

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FEBRUARY 1948

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR FEBRUARY 1948

AEROLOGICAL OBSERVATIONS

[For description of change in Table 1 and charts, see REVIEW, January 1946, p. 6]

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during February 1948*

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (1,012.9 mb.)				Albuquerque, N. Mex. (835.9 mb.)				Apalachicola, Fla. (1,021.3 mb.)				Atlanta, Ga. (986.8 mb.)				Auburn, Calif. (960.0 mb.)				Big Spring, Tex. (927.8 mb.)				Bismarck, N. Dak. (959.0 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	28	86	−8.2	72	29	1,620	3.3	61	29	5	13.7	90	29	300	7.8	82	29	501	6.8	64	29	774	6.9	63	27	505	−12.7	89
1,000	28	184	−8.6	68	29	136	(*)	----	29	183	14.3	86	29	189	(*)	----	29	162	(*)	----	29	150	(*)	----	27	181	(*)	----
950	28	588	−8.0	69	29	570	(*)	----	29	620	13.3	79	29	619	8.3	79	29	589	7.9	58	29	579	(*)	----	27	578	(*)	----
900	28	1,002	−8.9	66	29	1,017	(*)	----	29	1,071	12.2	70	29	1,060	7.6	79	29	1,030	5.4	54	29	1,023	6.7	63	27	989	−11.0	75
850	28	1,444	−9.5	57	29	1,482	(*)	----	29	1,549	10.6	61	29	1,531	6.4	75	29	1,495	2.3	54	29	1,493	7.2	57	27	1,429	−9.8	68
800	28	1,912	−9.9	49	29	1,975	2.7	57	29	2,053	9.0	52	29	2,027	4.7	65	29	1,982	−.7	54	29	1,992	6.5	46	27	1,897	−10.4	65
750	28	2,414	−11.6	50	29	2,499	−.3	57	29	2,591	6.7	51	29	2,558	3.1	58	29	2,500	−3.5	50	29	2,523	4.0	39	27	2,399	−11.4	63
700	28	2,935	−13.3	53	29	3,043	−3.6	57	29	3,149	4.0	49	29	3,108	.5	54	29	3,037	−6.8	48	29	3,077	1.1	33	27	2,920	−13.7	62
650	28	3,502	−15.2	51	29	3,631	−7.3	57	28	3,749	.7	40	28	3,705	−2.2	48	29	3,615	−10.2	44	29	3,670	−2.4	32	27	3,489	−16.4	60
600	28	4,098	−18.1	51	29	4,244	−11.5	56	28	4,384	−3.2	41	28	4,333	−5.8	50	29	4,224	−14.0	45	29	4,299	−6.4	----	27	4,079	−19.0	61
550	28	4,747	−21.9	----	29	4,908	−15.2	48	28	5,068	−7.5	38	28	5,012	−9.6	47	29	4,881	−18.3	50	29	4,977	−10.7	----	27	4,726	−22.6	----
500	28	5,439	−26.3	----	29	5,624	−19.6	----	28	5,803	−12.3	----	28	5,740	−14.3	48	29	5,583	−23.2	----	29	5,701	−15.5	----	26	5,416	−27.1	----
450	28	6,198	−31.2	----	29	6,402	−25.0	----	28	6,606	−17.7	----	28	6,536	−19.8	54	29	6,355	−28.8	----	29	6,491	−21.0	----	26	6,174	−32.4	----
400	27	7,021	−36.5	----	28	7,235	−30.9	----	28	7,471	−23.8	----	28	7,395	−25.8	----	29	7,181	−34.1	----	29	7,349	−26.8	----	26	6,987	−38.2	----
350	27	7,934	−42.7	----	28	8,168	−37.8	----	28	8,433	−30.8	----	28	8,347	−33.0	----	29	8,104	−40.2	----	29	8,298	−33.8	----	24	7,892	−45.0	----
300	26	8,953	−49.0	----	25	9,214	−44.6	----	28	9,506	−39.4	----	28	9,412	−41.3	----	28	9,147	−46.4	----	29	9,362	−41.4	----	21	8,915	−51.2	----
250	14	10,112	−52.2	----	19	10,432	−51.0	----	27	10,731	−49.4	----	28	10,624	−50.7	----	27	10,329	−53.4	----	28	10,577	−49.9	----	15	10,100	−55.9	----
200	9	11,596	−54.6	----	----	----	----	----	26	12,164	−57.2	----	24	12,049	−57.2	----	24	11,753	−55.7	----	18	12,040	−56.1	----	9	11,512	−54.0	----
175	----	----	----	----	----	----	----	----	24	12,999	−58.8	----	23	12,891	−58.2	----	20	12,616	−55.4	----	11	12,887	−57.7	----	7	12,411	−53.9	----
150	----	----	----	----	----	----	----	----	21	13,956	−61.9	----	16	13,863	−59.7	----	15	13,588	−55.7	----	----	----	----	----	6	13,409	−53.4	----
125	----	----	----	----	----	----	----	----	9	15,089	−66.2	----	10	14,988	−63.6	----	7	14,757	−56.9	----	----	----	----	----	----	----	----	----

	Boise, Idaho (916.5 mb.)				Brownsville, Tex. (1,016.4 mb.)				Buffalo, N. Y. (995.2 mb.)				Caribou, Maine (996.7 mb.)				Charleston, S. C. (1,021.5 mb.)				Ciudad Victoria, Mexico (973.4 mb.)				Columbia, Mo. (992.6 mb.)			
Surface	29	863	0.3	71	29	6	16.3	90	29	221	−4.9	78	29	191	−15.6	76	29	13	8.6	88	28	335	21.3	59	29	239	0.0	76
1,000	29	161	(*)	----	29	144	16.2	87	29	181	(*)	----	29	164	(*)	----	29	189	9.7	84	28	99	(*)	----	29	178	(*)	----
950	29	583	(*)	----	29	588	15.0	82	29	587	−5.7	75	29	556	−14.0	68	29	622	9.3	80	28	551	20.0	60	29	594	−.9	74
900	29	1,014	2.0	61	29	1,039	15.0	66	29	1,007	−7.4	73	29	962	−15.6	66	29	1,065	9.1	80	28	1,009	17.1	64	29	1,020	−1.0	71
850	29	1,473	−.2	56	29	1,523	14.2	56	29	1,451	−8.1	65	29	1,392	−16.9	66	29	1,537	7.4	73	28	1,495	15.3	64	29	1,476	−.8	65
800	29	1,955	−3.5	59	29	2,035	13.8	40	29	1,921	−9.1	58	29	1,846	−17.8	61	29	2,036	5.7	60	28	2,008	14.0	57	29	1,960	−1.3	59
750	29	2,466	−6.8	64	29	2,581	11.4	37	29	2,425	−10.2	52	29	2,334	−18.8	55	29	2,568	3.9	53	28	2,557	12.1	50	29	2,481	−2.9	57
700	29	2,998	−10.1	67	29	3,149	8.1	33	29	2,949	−12.1	53	29	2,840	−20.5	56	29	3,121	1.2	48	28	3,126	8.5	45	29	3,016	−5.3	56
650	29	3,569	−13.6	69	29	3,756	4.0	32	29	3,520	−14.3	54	29	3,393	−22.3	----	29	3,717	−1.9	46	28	3,737	4.3	41	29	3,600	−8.4	53
600	29	4,170	−17.4	73	29	4,401	−.5	33	29	4,117	−17.5	53	29	3,970	−24.8	----	29	4,347	−5.8	45	28	4,382	.0	37	29	4,212	−11.5	48
550	29	4,818	−21.6	----	29	5,090	−5.2	37	29	4,767	−20.9	----	29	4,601	−28.2	----	29	5,025	−9.9	42	28	5,075	−4.5	----	29	4,877	−15.4	42
500	29	5,512	−26.4	----	29	5,832	−10.0	----	28	5,467	−25.4	----	29	5,276	−32.3	----	29	5,753	−14.7	46	28	5,817	−9.6	----	29	5,587	−20.0	----
450	28	6,278	−31.6	----	29	6,642	−15.3	----	28	6,231	−30.3	----	29	6,020	−36.3	----	29	6,551	−20.1	50	28	6,635	−15.2	----	29	6,364	−25.4	----
400	27	7,093	−37.3	----	29	7,515	−22.1	----	28	7,053	−36.0	----	29	6,823	−40.0	----	29	7,407	−26.1	----	28	7,504	−21.4	----	28	7,207	−31.6	----
350	25	7,998	−43.9	----	29	8,484	−29.2	----	26	7,957	−42.1	----	29	7,720	−46.0	----	28	8,362	−33.1	----	28	8,475	−29.1	----	28	8,139	−38.3	----
300	24	9,031	−49.9	----	28	9,566	−37.6	----	23	8,993	−48.8	----	29	8,736	−49.8	----	28	9,429	−41.1	----	28	9,558	−37.7	----	28	9,180	−46.0	----
250	19	10,203	−53.5	----	25	10,797	−47.6	----	17	10,208	−54.3	----	28	9,930	−51.9	----	23	10,637	−50.8	----	15	10,785	−47.4	----	26	10,378	−53.4	----
200	14	11,623	−53.7	----	24	12,239	−57.0	----	7	11,579	−54.3	----	23	11,362	−49.7	----	18	12,071	−58.3	----	----	----	----	----	10	11,753	−53.2	----
175	10	12,453	−52.0	----	21	13,087	−59.4	----	5	12,426	−53.3	----	19	12,222	−49.1	----	17	12,915	−59.1	----	----	----	----	----	8	12,615	−55.5	----
150	5	13,411	−52.5	----	13	14,044	−61.3	----	----	----	----	----	16	13,249	−50.0	----	11	13,852	−59.8	----	----	----	----	----	----	----	----	----
125	----	----	----	----	----	----	----	----	----	----	----	----	9	14,461	−50.9	----	----	----	----	----	----	----	----	----	----	----	----	----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during January 1948*—Continued

Standard pressure surface (mb.)	Dodge City, Kans. (926.3 mb.)				El Paso, Tex. (880.6 mb.)				Ely, Nev. (806.4 mb.)				Fort Worth, Tex. (994.7 mb.)				Glasgow, Mont. (941.6 mb.)				Grand Junction, Colo. (851.1 mb.)				Great Falls, Mont. (886.3 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	29	787	−1.7	83	29	1,195	9.6	45	29	1,908	−4.0	73	29	211	7.4	79	29	648	−11.8	78	29	1,474	−1.5	71	29	1,128	−6.9	72
1,000	29	170	(*)	----	29	122	(*)	----	29	169	(*)	----	29	167	2.5	77	29	179	(*)	----	29	166	(*)	----	29	171	(*)	----
950	29	586	(*)	----	29	563	(*)	----	29	591	(*)	----	29	592	6.5	75	29	580	(*)	----	29	588	(*)	----	29	584	(*)	----
900	29	1,016	−.8	78	29	1,016	(*)	----	29	1,029	(*)	----	29	1,033	6.5	73	29	994	−9.6	70	29	1,029	(*)	----	29	1,010	(*)	----
850	29	1,473	−.2	69	29	1,488	9.6	39	29	1,487	(*)	----	29	1,504	7.1	66	29	1,436	−9.3	66	29	1,484	−1.2	67	29	1,453	−7.2	69
800	29	1,959	−.2	57	29	1,988	6.5	40	29	1,972	−2.0	65	29	2,002	6.2	51	29	1,904	−9.9	65	29	1,967	−2.3	62	29	1,924	−8.6	70
750	29	2,478	−2.3	55	29	2,520	3.3	40	29	2,486	−4.3	61	29	2,535	3.7	46	29	2,405	−11.4	60	29	2,482	−5.0	65	29	2,428	−10.7	72
700	29	3,019	−4.5	51	29	3,070	−.1	37	29	3,022	−8.2	65	29	3,087	.9	38	29	2,927	−13.7	61	29	3,017	−7.6	67	29	2,951	−12.9	69
650	29	3,603	−7.4	45	29	3,662	−4.1	39	29	3,596	−11.8	66	29	3,683	−2.2	----	29	3,493	−16.8	60	28	3,591	−11.8	70	29	3,518	−15.8	60
600	28	4,219	−10.9	45	29	4,286	−8.3	43	29	4,202	−15.3	66	29	4,310	−6.2	----	29	4,085	−20.0	58	28	4,197	−15.8	69	29	4,112	−19.4	59
550	28	4,882	−15.3	----	29	4,960	−12.7	45	29	4,852	−19.4	66	28	4,984	−10.6	----	29	4,727	−23.8	----	28	4,849	−20.1	67	28	4,752	−23.9	----
500	28	5,596	−20.0	----	29	5,676	−17.7	----	29	5,555	−24.3	----	28	5,709	−15.6	----	28	5,412	−28.2	----	28	5,547	−24.4	----	28	5,440	−28.6	----
450	28	6,378	−25.4	----	29	6,462	−22.8	----	29	6,314	−30.1	----	27	6,507	−21.3	----	28	6,164	−33.5	----	27	6,317	−29.7	----	28	6,190	−33.8	----
400	28	7,214	−31.4	----	29	7,309	−28.9	----	28	7,140	−35.8	----	27	7,356	−27.3	----	28	6,978	−39.2	----	26	7,147	−35.2	----	28	7,003	−39.7	----
350	28	8,145	−38.3	----	28	8,250	−35.8	----	27	8,062	−41.5	----	27	8,303	−34.3	----	27	7,873	−45.9	----	25	8,069	−42.0	----	28	7,903	−46.1	----
300	27	9,190	−46.2	----	26	9,314	−43.8	----	25	9,091	−47.7	----	27	9,364	−42.1	----	27	8,883	−52.4	----	25	9,096	−48.9	----	27	8,917	−52.0	----
250	24	10,388	−54.2	----	21	10,532	−52.7	----	23	10,296	−53.5	----	27	10,574	−50.8	----	24	10,060	−55.9	----	25	10,277	−54.5	----	27	10,087	−55.4	----
200	21	11,814	−57.4	----	19	11,955	−57.7	----	20	11,723	−55.2	----	26	12,003	−57.1	----	15	11,491	−53.7	----	20	11,709	−55.5	----	20	11,529	−54.9	----
175	16	12,653	−56.2	----	17	12,807	−58.8	----	13	12,577	−53.8	----	24	12,849	−58.2	----	10	12,376	−52.0	----	18	12,555	−53.8	----	16	12,393	−52.8	----
150	13	13,625	−56.5	----	10	13,789	−60.9	----	9	13,576	−56.6	----	22	13,822	−59.4	----	7	13,406	51.3	----	10	13,595	−54.4	----	6	13,390	−51.7	----
125	6	14,840	−59.6	----	5	14,923	−65.8	----	----	----	----	----	12	14,965	−62.8	----	----	----	----	----	5	14,807	−57.0	----	----	----	----	----

Standard pressure surface (mb.)	Greensboro, N. C. (990.7 mb.)				Hatteras, N. C. (1,022.1 mb.)				Havana, Cuba [1] (---- mb.)				Honolulu, T. H. (1,013.3 mb.)				Huntington, W. Va. (1,001.2 mb.)				International Falls, Minn. (978.7 mb.)				Joliet, Ill. (1,000.4 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	29	273	3.2	78	29	3	8.3	86	----	----	----	----	29	3	23.5	65	28	172	2.9	79	29	360	−15.8	80	29	178	−4.2	79
1,000	29	196	(*)	----	29	183	9.6	79	----	----	----	----	29	118	21.9	66	28	179	(*)	----	29	195	(*)	----	29	180	(*)	----
950	29	617	3.9	75	29	615	8.8	70	----	----	----	----	29	564	18.2	71	28	599	2.5	76	29	585	−14.7	75	29	591	−3.9	72
900	29	1,053	3.7	76	29	1,056	7.0	70	----	----	----	----	29	1,022	14.9	71	28	1,031	.7	77	29	992	−14.7	72	29	1,011	−4.6	63
850	29	1,516	2.8	73	29	1,524	4.9	69	----	----	----	----	29	1,504	11.9	67	28	1,490	−.2	68	29	1,426	−13.6	67	29	1,461	−4.8	53
800	29	2,006	1.0	70	29	2,017	2.8	66	----	----	----	----	29	2,010	10.0	49	28	1,974	−1.5	67	29	1,886	−14.2	63	29	1,938	−5.2	56
750	28	2,530	−.7	60	29	2,543	.8	60	----	----	----	----	29	2,551	8.0	41	28	2,492	−3.0	67	29	2,380	−15.2	58	29	2,449	−6.4	55
700	28	3,074	−2.9	52	29	3,091	−1.3	55	----	----	----	----	29	3,111	5.4	----	28	3,032	−5.4	65	29	2,895	−16.6	58	29	2,981	−8.8	57
650	28	3,659	−5.6	52	29	3,680	−4.2	54	----	----	----	----	29	3,713	2.2	----	28	3,611	−8.3	63	29	3,453	−19.1	61	29	3,557	−11.6	56
600	28	4,283	−9.0	54	28	4,307	−7.7	49	----	----	----	----	29	4,354	−1.9	----	28	4,227	−11.8	60	29	4,041	−22.4	----	29	4,161	−15.0	55
550	28	4,953	−13.3	57	28	4,980	−11.7	42	----	----	----	----	29	5,040	−6.5	----	28	4,886	−15.7	60	29	4,674	−25.7	----	29	4,816	−19.0	54
500	28	5,669	−18.3	56	28	5,703	−16.5	48	----	----	----	----	29	5,778	−11.5	----	28	5,601	−20.2	60	29	5,361	−29.7	----	29	5,517	−23.4	----
450	28	6,456	−23.6	----	27	6,492	−21.8	----	----	----	----	----	28	6,579	−17.6	----	28	6,381	−25.4	----	28	6,114	−34.1	----	29	6,281	−28.9	----
400	28	7,301	−29.4	----	27	7,342	−27.9	----	----	----	----	----	28	7,446	−24.2	----	28	7,220	−31.1	----	28	6,928	−39.5	----	29	7,113	−34.5	----
350	27	8,236	−36.3	----	26	8,291	−34.9	----	----	----	----	----	28	8,406	−31.0	----	28	8,152	−38.1	----	28	7,829	−45.7	----	29	8,034	−40.9	----
300	27	9,286	−44.7	----	26	9,349	−42.6	----	----	----	----	----	27	9,487	−36.8	----	27	9,206	−45.0	----	27	8,849	−52.0	----	29	9,066	−47.8	----
250	27	10,479	−53.4	----	24	10,561	−51.6	----	----	----	----	----	28	10,736	−41.3	----	18	10,403	−53.0	----	23	10,021	−54.4	----	27	10,246	−54.1	----
200	22	11,884	−57.1	----	18	11,992	−58.9	----	----	----	----	----	28	12,226	−49.2	----	13	11,817	−55.0	----	14	11,441	−48.7	----	15	11,685	−55.3	----
175	20	12,724	−58.2	----	14	12,836	−58.4	----	----	----	----	----	28	13,092	−54.3	----	9	12,670	−54.4	----	11	12,307	−48.0	----	10	12,553	−54.5	----
150	13	13,679	−59.1	----	6	13,795	−59.6	----	----	----	----	----	28	14,066	−60.0	----	5	13,636	−54.3	----	8	13,353	−47.9	----	----	----	----	----
125	9	14,810	−62.0	----	----	----	----	----	----	----	----	----	28	15,152	−65.9	----	----	----	----	----	----	----	----	----	----	----	----	----
100	----	----	----	----	----	----	----	----	----	----	----	----	26	16,530	−71.6	----	----	----	----	----	----	----	----	----	----	----	----	----
80	----	----	----	----	----	----	----	----	----	----	----	----	20	17,846	−71.0	----	----	----	----	----	----	----	----	----	----	----	----	----
60	----	----	----	----	----	----	----	----	----	----	----	----	16	19,571	−66.8	----	----	----	----	----	----	----	----	----	----	----	----	----
50	----	----	----	----	----	----	----	----	----	----	----	----	9	20,682	−63.0	----	----	----	----	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	Lake Charles, La. (1,019.9 mb.)				Lander, Wyo. (826.0 mb.)				Las Vegas, Nev. (948.6 mb.)				Little Rock, Ark. (1,011.9 mb.)				Mazatlan, Mexico (1,010.9 mb.)				Medford, Oreg. (972.0 mb.)				Merida, Mexico (1,013.1 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	29	5	11.7	89	29	1,696	−6.8	71	29	574	9.5	38	29	79	5.4	77	29	14	20.5	79	29	401	3.8	80	29	27	25.3	68
1,000	29	170	11.9	86	29	173	(*)	----	29	131	(*)	----	29	175	5.1	76	29	108	20.5	73	29	170	(*)	----	29	141	24.7	69
950	29	606	11.3	84	29	588	(*)	----	29	562	(*)	----	29	596	4.4	72	29	558	21.9	48	29	589	4.1	73	29	593	22.3	66
900	29	1,052	10.8	75	29	1,019	(*)	----	29	1,010	8.9	31	29	1,035	4.6	71	29	1,021	20.0	41	29	1,026	2.1	68	29	1,059	19.2	69
850	29	1,528	10.1	59	29	1,469	(*)	----	29	1,480	5.6	33	29	1,501	4.8	66	29	1,511	17.0	40	29	1,485	−1.0	72	29	1,549	15.9	71
800	29	2,032	8.7	54	29	1,946	−5.4	67	29	1,972	2.5	36	29	1,995	3.7	62	29	2,025	13.7	37	29	1,965	−4.1	74	29	2,061	12.6	64
750	29	2,572	6.9	44	29	2,455	−6.6	58	29	2,495	−1.5	42	29	2,520	1.9	55	29	2,570	9.9	39	29	2,476	−7.1	68	29	2,591	10.3	46
700	29	3,128	4.2	42	29	2,988	−9.2	58	29	3,035	−5.5	44	29	3,071	−.9	53	29	3,135	5.9	41	29	3,007	−9.8	58	29	3,173	8.8	----
650	29	3,730	.6	42	29	3,562	−12.8	57	29	3,617	−9.5	48	29	3,659	−3.7	43	29	3,738	2.1	38	29	3,581	−13.0	56	29	3,784	5.9	----
600	29	4,365	−3.6	42	29	4,164	−16.2	53	29	4,227	−13.6	50	29	4,288	−7.2	----	29	4,380	−1.8	----	29	4,181	−16.6	56	29	4,432	2.0	----
550	29	5,046	−8.3	44	29	4,817	−20.5	53	29	4,884	−17.6	44	28	4,965	−11.3	----	29	5,064	−6.5	----	29	4,830	−20.7	----	29	5,127	−2.7	----
500	28	5,782	−12.9	----	29	5,511	−25.6	----	29	5,590	−22.7	----	28	5,688	−16.2	----	28	5,804	−11.2	----	29	5,528	−25.1	----	29	5,877	−7.9	----
450	27	6,582	−18.6	----	29	6,272	−31.4	----	29	6,360	−27.9	----	28	6,480	−21.5	----	28	6,609	−17.1	----	29	6,291	−30.3	----	29	6,695	−13.7	----
400	27	7,447	−24.7	----	29	7,090	−37.7	----	29	7,193	−33.2	----	27	7,329	−27.4	----	28	7,478	−23.2	----	29	7,113	−36.1	----	29	7,574	−20.2	----
350	27	8,405	−31.5	----	29	7,996	−44.5	----	28	8,123	−39.3	----	25	8,280	−34.0	----	28	8,442	−30.4	----	29	8,028	−41.8	----	29	8,548	−28.5	----
300	26	9,479	−39.6	----	29	9,012	−51.0	----	27	9,165	−46.1	----	24	9,342	−41.5	----	28	9,521	−38.7	----	29	9,058	−48.0	----	29	9,631	−37.6	----
250	24	10,692	−50.2	----	28	10,173	−55.6	----	27	10,359	−52.8	----	17	10,567	−50.5	----	18	10,781	−48.1	----	29	10,242	−53.9	----	27	10,859	−47.3	----
200	17	12,109	−59.1	----	20	11,610	−53.7	----	26	11,788	−54.9	----	10	11,981	−57.4	----	7	12,205	−58.1	----	25	11,652	−55.0	----	19	12,305	−56.7	----
175	16	12,949	−59.3	----	15	12,458	−53.2	----	26	12,641	−54.6	----	----	----	----	----	6	13,059	−60.1	----	24	12,512	−54.8	----	10	13,132	−60.2	----
150	14	13,914	−61.6	----	10	13,456	−53.8	----	22	13,626	−55.3	----	----	----	----	----	6	14,012	−63.9	----	20	13,488	−54.4	----	----	----	----	----
125	7	15,055	−66.5	----	----	----	----	----	12	14,759	−55.9	----	----	----	----	----	----	----	----	----	11	14,611	−54.7	----	----	----	----	----
100	----	----	----	----	----	----	----	----	5	16,165	−58.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during February 1948*—Continued

Standard pressure surface (mb.)	Miami, Fla. (1,020.6 mb.)				Nantucket, Mass. (1,021.6 mb.)				Nashville, Tenn. (1,000.2 mb.)				New Orleans, La. (1,020.7 mb.)				North Platte, Nebr. (918.4 mb.)				Oakland, Calif. (1,019.3 mb.)				Ogden, Utah (863.7 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	29	4	20.1	84	29	14	−1.3	78	28	180	5.4	80	29	2	13.0	87	29	849	−3.3	73	29	6	10.0	71	29	1,355	−0.6	68
1,000	29	180	20.4	80	29	183	−1.5	76	28	181	(*)	....	29	174	13.1	85	29	167	(*)	....	29	165	9.4	71	29	165	(*)	....
950	29	624	17.4	80	29	592	−3.6	76	28	603	3.9	80	29	609	11.6	82	29	581	(*)	....	29	596	7.3	65	29	588	(*)	....
900	29	1,082	14.7	75	29	1,016	−5.8	70	28	1,039	3.4	78	29	1,057	11.1	73	29	1,009	−2.4	70	29	1,032	5.0	58	29	1,028	(*)	....
850	29	1,564	12.5	66	29	1,463	−6.7	56	28	1,502	3.2	68	29	1,534	10.2	60	29	1,461	−3.9	68	29	1,496	2.5	53	29	1,483	.1	60
800	29	2,072	11.2	46	29	1,935	−7.3	49	28	1,993	1.7	62	29	2,038	8.5	56	29	1,939	−4.3	63	29	1,985	.3	50	29	1,967	−2.5	58
750	29	2,614	9.0	39	29	2,443	−8.3	45	27	2,518	−.5	59	29	2,572	6.7	50	29	2,454	−5.6	58	29	2,507	−2.4	49	29	2,482	−5.9	62
700	29	3,177	6.3	30	29	2,971	−9.6	46	27	3,063	−2.9	57	29	3,133	4.0	42	29	2,986	−8.0	57	29	3,044	−5.6	46	29	3,013	−9.5	66
650	29	3,782	3.0	25	29	3,544	−12.5	50	27	3,649	−5.8	54	28	3,734	.6	39	29	3,564	−11.1	57	29	3,628	−9.2	43	29	3,589	−13.2	71
600	29	4,424	−.6	....	29	4,148	−15.9	50	26	4,269	−9.5	52	26	4,375	−3.2	....	29	4,169	−14.6	58	29	4,236	−13.0	44	29	4,187	−16.8	71
550	29	5,113	−4.8	....	29	4,800	−19.5	49	26	4,938	−13.3	....	25	5,062	−7.6	....	29	4,826	−19.1	59	29	4,898	−17.0	43	29	4,840	−20.9	....
500	29	5,857	−9.9	....	28	5,503	−24.1	....	26	5,657	−17.8	....	25	5,794	−12.5	....	29	5,525	−23.9	....	29	5,603	−21.9	....	29	5,533	−25.6	....
450	29	6,669	−15.5	....	28	6,270	−28.7	....	26	6,441	−23.0	....	25	6,600	−17.7	....	29	6,296	−29.1	....	29	6,379	−27.2	....	29	6,296	−31.2	....
400	29	7,540	−22.0	....	27	7,097	−34.5	....	26	7,290	−29.0	....	25	7,464	−23.4	....	29	7,118	−35.0	....	29	7,209	−32.8	....	29	7,114	−37.1	....
350	29	8,507	−29.7	....	25	8,012	−40.6	....	26	8,231	−35.8	....	25	8,426	−30.8	....	29	8,036	−41.5	....	29	8,137	−38.6	....	29	8,024	−43.5	....
300	28	9,586	−38.4	....	23	9,044	−47.2	....	24	9,291	−43.8	....	25	9,501	−39.1	....	28	9,066	−48.9	....	29	9,181	−45.5	....	29	9,047	−49.0	....
250	27	10,814	−48.1	....	20	10,226	−52.5	....	21	10,500	−52.2	....	25	10,723	−49.3	....	28	10,244	−54.9	....	26	10,381	−52.1	....	27	10,241	−54.5	....
200	20	12,254	−56.0	....	9	11,694	−53.8	....	15	11,946	−58.9	....	25	12,152	−58.5	....	22	11,665	−54.8	....	22	11,803	−55.8	....	25	11,667	−55.3	....
175	19	13,098	−59.1	....	6	12,514	−54.3	....	11	12,777	−59.1	....	22	12,998	−59.9	....	17	12,507	−53.2	....	20	12,654	−54.2	....	23	12,517	−53.6	....
150	14	14,044	−63.3	....	....	....	....	....	6	13,726	−59.4	....	20	13,967	−62.0	....	11	13,514	−54.4	....	18	13,655	−54.8	....	17	13,525	−54.1	....
125	8	15,139	−67.6	....	....	....	....	....	....	....	....	....	14	15,099	−65.9	....	....	....	....	....	9	14,778	−55.4	....	9	14,683	−56.8	....

	Oklahoma City, Okla. (973.2 mb.)				Omaha, Nebr. (984.5 mb.)				Phoenix, Ariz. (975.4 mb.)				Pittsburgh, Pa. (975.8 mb.)				Portland, Maine (1,020.7 mb.)				Rapid City, S. Dak. (902.4 mb.)				St. Cloud, Minn. (982.5 mb.)			
Surface	29	391	2.5	82	29	308	−3.1	73	29	339	12.5	46	29	382	−0.6	69	29	20	−7.6	66	29	980	−7.1	76	29	317	−11.9	88
1,000	29	169	(*)	....	29	182	(*)	....	29	128	(*)	....	29	183	(*)	....	29	179	−6.7	62	29	166	(*)	....	29	179	(*)	....
950	29	586	2.6	77	29	590	−4.9	78	29	568	13.7	40	29	599	−1.3	67	29	581	−8.3	61	29	578	(*)	....	29	581	−10.8	80
900	29	1,023	2.5	74	29	1,013	−4.9	73	29	1,014	10.5	41	29	1,025	−2.5	69	29	996	−9.9	60	29	1,001	(*)	....	29	990	−9.9	70
850	29	1,486	3.5	66	29	1,464	−4.0	68	29	1,45[illegible]	6.8	45	29	1,478	−3.6	63	29	1,436	−11.0	56	29	1,446	−5.2	62	29	1,431	−9.2	60
800	29	1,978	3.1	57	29	1,941	−4.5	68	29	1,982	3.0	50	29	1,956	−4.6	63	29	1,901	−11.6	51	29	1,923	−5.8	60	29	1,900	−9.7	60
750	29	2,504	1.1	52	29	2,454	−5.2	54	29	2,509	−.4	49	29	2,469	−6.3	59	29	2,402	−12.9	....	29	2,434	−7.6	62	29	2,404	−10.7	62
700	29	3,052	−1.3	47	29	2,989	−7.6	50	29	3,050	−3.7	47	29	3,000	−8.4	59	29	2,919	−14.3	....	29	2,962	−9.9	60	29	2,926	−12.7	61
650	29	3,639	−4.6	46	29	3,568	−10.8	50	29	3,638	−7.1	42	29	3,578	−10.9	57	29	3,484	−16.7	....	29	3,537	−12.9	59	29	3,494	−15.0	55
600	28	4,262	−8.5	43	29	4,174	−14.4	50	29	4,253	−10.7	41	29	4,184	−14.1	58	29	4,076	−19.6	....	29	4,140	−16.5	57	29	4,091	−18.1	58
550	28	4,932	−13.0	45	29	4,832	−18.8	52	29	4,923	−15.2	42	28	4,844	−18.2	60	29	4,718	−23.2	....	28	4,795	−20.3	52	29	4,740	−21.5	....
500	28	5,651	−17.6	47	29	5,532	−23.2	....	29	5,630	−20.0	44	28	5,548	−22.6	....	29	5,409	−27.6	....	27	5,487	−24.2	....	29	5,433	−25.7	....
450	27	6,439	−23.0	....	29	6,301	−28.5	....	29	6,413	−25.0	....	27	6,325	−27.6	....	29	6,164	−32.6	....	26	6,241	−31.0	....	29	6,194	−30.7	....
400	27	7,286	−29.3	....	29	7,131	−34.5	....	28	7,254	−31.0	....	27	7,155	−33.6	....	29	6,980	−38.3	....	26	7,063	−37.3	....	29	7,017	−36.7	....
350	24	8,244	−35.5	....	28	8,051	−41.5	....	25	8,206	−36.9	....	27	8,079	−40.1	....	27	7,885	−43.7	....	26	7,972	−44.2	....	29	7,927	−43.5	....
300	24	9,299	−43.1	....	27	9,083	−49.3	....	24	9,271	−43.9	....	26	9,116	−47.5	....	26	8,904	−49.0	....	23	8,993	−50.1	....	28	8,954	−49.9	....
250	18	10,503	−51.0	....	27	10,260	−55.8	....	22	10,464	−52.0	....	23	10,314	−55.2	....	24	10,083	−52.4	....	21	10,177	−54.4	....	22	10,137	−54.5	....
200	6	11,961	−54.9	....	21	11,678	−55.0	....	18	11,891	−55.5	....	19	11,741	−58.7	....	18	11,485	−51.5	....	18	11,602	−51.8	....	13	11,574	−52.4	....
175	5	12,812	−58.2	....	8	12,541	−52.8	....	10	12,666	−53.8	....	13	12,563	−56.5	....	15	12,324	−51.0	....	17	12,470	−51.4	....	7	12,437	−49.5	....
150	....	....	....	....	....	....	....	....	....	....	....	....	7	13,488	−56.2	....	11	13,297	−52.5	....	10	13,483	−51.4	....	....	....	....	....
125	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	9	14,475	−53.2	....	6	14,706	−53.1	....	....	....	....	....
100	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	15,946	−53.7	....	....	....	....	....	....	....	....	....
80	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	17,380	−55.2	....	....	....	....	....	....	....	....	....

	San Antonio, Tex. (989.7 mb.)				San Juan, P. R. (1,016.5 mb.)				Santa Maria, Calif. (1,010.4 mb.)				Sault Ste. Marie, Mich. (993.5 mb.)				Spokane, Wash. (931.9 mb.)				Swan Island, W. I. (1,015.6 mb.)				Tacubaya, Mexico (773.5 mb.)			
Surface	29	240	11.2	79	29	15	24.0	77	29	71	10.1	72	29	221	−10.1	84	29	721	−1.6	75	29	10	23.2	80	28	2,306	17.3	41
1,000	29	152	(*)	....	29	158	22.7	77	29	157	10.2	67	29	169	(*)	....	29	154	(*)	....	29	146	24.4	80	28	49	(*)	....
950	29	588	10.8	78	29	606	19.1	80	29	584	8.9	57	29	569	−10.5	81	29	571	(*)	....	29	599	20.6	83	28	513	(*)	....
900	29	1,033	10.3	78	29	1,067	15.6	82	29	1,028	6.5	49	29	979	−12.0	79	29	997	−2.6	74	29	1,060	17.6	78	28	991	(*)	....
850	29	1,509	9.6	70	29	1,551	12.6	77	29	1,495	3.8	45	29	1,415	−13.5	77	29	1,449	−4.9	73	29	1,547	14.8	72	28	1,489	(*)	....
800	29	2,012	9.2	47	29	2,058	10.7	62	29	1,985	.9	43	29	1,875	−14.4	69	29	1,924	−6.9	71	29	2,058	12.0	60	28	2,018	(*)	....
750	29	2,552	7.3	38	29	2,602	9.5	36	29	2,504	−1.6	37	29	2,371	−15.1	61	29	2,428	−9.5	72	29	2,604	10.1	43	28	2,571	15.6	41
700	29	3,111	4.4	36	29	3,165	7.1	....	29	3,047	−4.3	37	29	2,883	−16.6	60	29	2,955	−12.5	70	29	3,169	7.9	....	28	3,150	10.9	46
650	29	3,710	.7	35	29	3,772	4.0	....	29	3,629	−7.4	37	29	3,445	−18.9	58	29	3,522	−15.6	69	29	3,783	5.1	....	28	3,764	5.8	52
600	29	4,348	−3.3	32	29	4,416	.7	....	29	4,246	−11.2	37	29	4,031	−21.7	....	29	4,118	−19.2	71	29	4,425	1.7	....	28	4,413	.4	58
550	29	5,032	−7.8	33	29	5,113	−3.3	....	29	4,912	−15.6	40	29	4,673	−24.9	....	29	4,761	−23.3	....	29	5,122	−2.4	....	28	5,104	−4.8	54
500	29	5,764	−13.0	34	29	5,855	−8.2	....	29	5,622	−20.2	....	28	5,358	−28.6	....	29	5,451	−27.8	....	29	5,872	−7.0	....	28	5,849	−9.1	....
450	29	6,563	−19.0	43	29	6,676	−13.9	....	29	6,403	−25.2	....	26	6,117	−33.3	....	29	6,205	−33.1	....	29	6,693	−12.6	....	28	6,662	−14.7	....
400	29	7,425	−25.2	....	28	7,546	−20.8	....	29	7,241	−31.0	....	25	6,922	−38.5	....	29	7,019	−38.7	....	29	7,574	−19.5	....	28	7,538	−21.2	....
350	28	8,379	−31.9	....	28	8,518	−28.4	....	29	8,176	−37.4	....	24	7,834	−43.9	....	29	7,923	−45.0	....	29	8,550	−27.4	....	27	8,507	−29.2	....
300	27	9,450	−39.6	....	25	9,612	−36.0	....	27	9,208	−44.8	....	20	8,881	−48.7	....	28	8,936	−51.1	....	29	9,640	−36.1	....	27	9,589	−38.0	....
250	25	10,675	−49.2	....	24	10,854	−44.4	....	23	10,436	−52.5	....	....	....	....	....	26	10,115	−54.5	....	29	10,980	−45.4	....	23	10,818	−47.6	....
200	21	12,109	−57.2	....	23	12,319	−53.4	....	17	11,869	−57.8	....	....	....	....	....	14	11,564	−53.1	....	29	12,336	−54.7	....	9	12,278	−56.8	....
175	19	12,954	−59.3	....	21	13,168	−58.8	....	14	12,725	−56.0	....	....	....	....	....	13	12,415	−51.3	....	28	13,182	−60.2	....	8	13,125	−60.7	....
150	14	13,911	−61.0	....	16	14,129	−64.6	....	10	13,710	−56.5	....	....	....	....	....	10	13,397	−52.3	....	25	14,127	−66.5	....	5	14,107	−64.8	....
125	....	....	....	....	....	....	....	....	5	14,860	−60.3	....	....	....	....	....	....	....	....	....	13	15,210	−73.7	....	....	....	....	....

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during February 1948*—Continued

Standard pressure surface (mb.)	Tampa, Fla. (1,020.8 mb.)				Tatoosh Island, Wash. (1,011.3 mb.)				Toledo, Ohio (998.7 mb.)				Washington, D. C. (1,022.0 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	29	9	17.0	83	28	31	4.8	82	29	191	−4.1	77	29	25	2.1	65
1,000	29	184	17.4	79	28	121	(*)	----	29	180	−6.8	78	29	199	2.1	58
950	29	626	15.5	76	28	540	1.7	81	29	589	−4.5	77	29	616	.8	60
900	29	1,080	13.3	74	28	971	−.8	79	29	1,010	−4.9	69	29	1,046	−.1	59
850	29	1,560	11.3	65	28	1,426	−3.0	75	29	1,459	−5.2	59	29	1,503	−1.0	55
800	29	2,065	9.7	50	28	1,904	−5.3	75	29	1,935	−6.1	57	29	1,985	−2.5	52
750	29	2,606	7.9	37	28	2,414	−7.8	73	29	2,444	−7.6	56	29	2,501	−3.8	53
700	29	3,165	5.0	35	28	2,942	−10.9	71	29	2,974	−9.2	54	29	3,039	−5.5	47
650	29	3,768	1.4	37	28	3,514	−14.3	67	29	3,553	−12.0	54	29	3,619	−8.4	50
600	29	4,405	−2.5	37	28	4,111	−17.8	63	29	4,154	−15.3	57	29	4,235	−11.8	47
550	29	5,089	−6.4	----	28	4,759	−22.1	----	28	4,809	−19.8	59	29	4,897	−15.9	45
500	29	5,829	−11.1	----	27	5,456	−26.6	----	28	5,507	−24.2	----	29	5,608	−20.2	----
450	29	6,636	−16.8	----	26	6,218	−32.0	----	28	6,271	−29.2	----	29	6,388	−25.2	----
400	29	7,504	−23.0	----	26	7,035	−37.3	----	28	7,101	−35.1	----	29	7,226	−31.3	----
350	28	8,466	−30.5	----	26	7,946	−42.8	----	28	8,019	−41.5	----	28	8,160	−38.2	----
300	28	9,540	−39.4	----	26	8,972	−48.7	----	27	9,049	−48.6	----	27	9,200	−46.5	----
250	26	10,753	−49.4	----	23	10,161	−52.3	----	26	10,234	−55.0	----	22	10,392	−54.8	----
200	26	12,185	−57.3	----	19	11,573	−51.1	----	18	11,666	−56.9	----	20	11,807	−58.0	----
175	26	13,023	−60.0	----	16	12,436	−49.0	----	11	12,503	−56.9	----	17	12,645	−58.2	----
150	22	13,985	−63.5	----	14	13,449	−48.8	----	----	----	----	----	12	13,634	−58.7	----
125	10	15,091	−68.5	----	13	14,639	−50.5	----	----	----	----	----	8	14,796	−62.8	----
100	----	----	----	----	7	16,108	−51.9	----	----	----	----	----	7	16,155	−65.6	----
80	----	----	----	----	----	----	----	----	----	----	----	----	6	17,507	−65.0	----

[1] Data not yet received.

* Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500 G. C. T., except at Ciudad Victoria, Mazatlan, and Merida, where they are taken near 0200 G. C. T.

"Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below −20° C.

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level.

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 2200 G. C. T., during February 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,627 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (100 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (273 m.)			Denver, Colo. (1,618 m.)			El Paso, Tex. (1,198 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	21	212	1.5	29	201	1.4	22	242	0.7	28	240	3.6	27	327	0.5	27	322	1.3	28	254	2.3	28	254	2.3	16	352	1.1	23	228	0.5	25	260	1.2	29	67	0.9	29	256	3.0
500	----	----	----	----	----	----	22	251	.9	----	----	----	----	----	----	----	----	----	28	243	3.9	28	243	3.9	16	306	1.9	23	244	2.0	25	235	2.1	----	----	----	----	----	----
1,000	21	202	3.8	----	----	----	21	243	2.6	----	----	----	27	280	3.7	27	315	1.6	21	257	6.0	21	257	6.0	16	281	4.3	18	240	5.0	23	256	3.9	----	----	----	----	----	----
1,500	16	229	7.0	----	----	----	16	269	7.0	28	254	6.6	24	285	7.5	27	296	3.0	16	262	8.1	16	262	8.1	14	270	6.1	18	261	5.9	21	272	7.0	----	----	----	29	252	4.2
2,000	16	247	10.4	29	206	2.1	15	277	7.2	27	276	9.0	24	287	8.8	24	288	4.8	16	273	11.5	16	273	11.5	10	299	10.8	15	277	8.8	18	281	9.6	29	54	.6	29	238	5.0
2,500	16	252	12.5	29	247	4.1	13	292	8.4	24	281	11.6	23	290	11.0	22	287	6.0	14	282	13.6	14	282	13.6	10	291	12.6	15	280	10.2	17	283	12.5	26	295	1.6	28	238	7.9
3,000	16	253	13.9	28	259	6.7	12	285	12.0	21	283	11.5	21	288	12.9	21	290	7.6	11	286	16.7	11	286	16.7	----	----	----	15	282	10.8	16	281	14.7	23	262	3.8	26	243	11.6
4,000	16	259	16.2	23	270	13.5	11	285	17.3	17	292	13.1	18	280	16.4	16	291	9.1	----	----	----	----	----	----	----	----	----	12	278	13.6	15	278	19.1	20	284	10.1	25	252	15.1
5,000	16	261	17.9	21	269	17.3	10	281	21.3	15	304	15.3	15	282	18.6	14	311	9.4	----	----	----	----	----	----	----	----	----	10	285	18.6	12	273	23.7	16	277	12.9	22	253	18.4
6,000	12	265	21.3	21	271	20.9	----	----	----	15	302	16.6	12	293	18.1	10	325	11.4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	14	271	19.3	21	256	20.7
8,000	6	270	27.5	16	269	23.2	----	----	----	----	----	----	10	290	21.6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	18	262	25.6
10,000	----	----	----	13	268	22.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	12	268	29.1
12,000	----	----	----	7	256	40.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,475 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (575 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	27	322	1.8	29	272	1.1	21	289	1.1	24	253	2.3	22	348	0.2	25	282	1.6	29	24	1.5	20	108	0.6	28	302	1.1	29	106	3.3	28	145	0.8	20	260	0.8	25	331	3.0
500	----	----	----	----	----	----	21	291	2.0	----	----	----	22	237	1.9	25	261	2.9	----	----	----	20	169	.5	28	305	1.2	29	104	4.5	27	195	2.0	20	235	1.6	25	298	4.5
1,000	----	----	----	----	----	----	21	279	3.4	24	248	4.3	20	241	3.4	20	246	4.8	29	43	1.5	17	211	2.6	28	258	1.3	27	100	2.6	10	70	.1	17	262	1.5	24	299	6.4
1,500	----	----	----	29	267	1.2	20	272	5.3	23	260	9.6	20	255	4.9	18	268	6.7	29	301	1.1	17	225	4.3	27	226	3.7	26	114	.7	10	299	1.2	12	274	5.0	21	302	9.5
2,000	27	324	1.8	29	237	1.5	13	289	10.1	23	271	10.5	17	262	7.8	18	269	10.0	28	298	2.8	16	250	7.2	24	240	4.1	24	325	.5	10	283	3.6	12	273	6.8	17	290	14.3
2,500	27	298	2.7	28	226	3.1	13	286	13.3	23	281	11.5	16	270	9.7	16	271	11.0	27	277	4.1	16	258	10.7	20	255	4.2	19	260	1.3	10	281	6.6	11	271	9.7	14	283	18.7
3,000	23	296	4.0	27	232	5.6	11	287	17.5	20	287	13.8	16	274	11.3	15	277	13.9	27	275	5.5	15	258	12.4	16	288	4.0	16	250	3.3	----	----	----	11	275	13.3	----	----	----
4,000	20	306	6.9	22	266	9.3	11	284	20.4	15	288	16.4	15	276	14.3	12	282	16.5	24	292	7.3	8	261	13.2	14	334	7.3	14	276	5.1	----	----	----	11	283	17.7	----	----	----
5,000	16	318	9.4	18	270	12.4	----	----	----	14	292	17.0	12	278	15.6	----	----	----	21	290	12.0	6	266	17.6	10	5	8.8	11	289	8.4	----	----	----	----	----	----	----	----	----
6,000	13	344	12.2	16	274	15.3	----	----	----	10	298	14.1	10	283	20.2	----	----	----	18	306	14.8	6	270	20.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
8,000	11	341	14.6	12	259	22.9	----	----	----	----	----	----	----	----	----	----	----	----	12	291	25.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 2200 G. C. T., during February 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*—Continued

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Cloud, Minn. (318 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (13 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (725 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	27	283	2.6	17	291	0.9	27	299	0.5	29	199	0.3	27	326	0.5	22	218	1.0	27	250	1.1	23	107	1.0	29	285	4.3	21	219	0.6	23	256	2.0	28	210	2.0	26	309	2.1
500	27	330	3.2	17	135	.1	27	236	.6	29	205	.5	---	---	---	22	226	2.1	27	247	2.0	23	173	.8	29	288	4.1	21	225	1.5	23	220	3.2	---	---	---	26	304	3.7
1,000	23	331	3.0	16	191	1.5	25	255	2.7	29	206	1.4	27	319	.6	20	235	4.0	24	281	4.8	17	180	1.9	26	309	2.4	20	262	3.0	19	207	3.9	28	209	3.4	26	256	5.7
1,500	22	333	4.3	15	227	4.8	23	284	4.8	29	228	2.2	27	284	3.4	19	267	6.7	23	286	7.9	14	238	3.3	23	326	2.7	17	277	6.7	17	201	2.2	25	225	5.3	25	290	8.7
2,000	21	332	5.9	14	245	8.6	19	283	7.7	25	247	3.7	22	292	5.8	19	267	9.6	21	282	11.0	11	263	7.2	23	327	4.2	15	279	10.1	12	22	.7	22	243	7.1	22	289	11.6
2,500	21	336	6.9	13	253	13.1	17	279	10.2	25	246	5.0	20	291	7.8	19	263	11.6	19	282	13.7	11	260	10.1	22	326	4.8	12	286	12.8	12	360	1.6	17	267	6.9	20	284	15.5
3,000	21	337	8.4	12	261	12.9	16	275	11.6	25	252	6.4	20	292	9.2	17	281	13.9	18	286	15.8	11	260	11.4	21	314	6.6	12	288	15.6	12	14	2.6	12	293	7.5	20	279	18.2
4,000	19	319	13.1	10	263	17.9	15	272	16.0	22	256	10.6	18	285	11.6	15	281	17.8	17	293	20.0	11	253	15.0	19	304	9.4	10	287	17.9	---	---	---	11	290	10.2	16	284	23.1
5,000	18	318	14.0	9	272	20.8	13	276	21.3	16	268	11.7	17	286	15.6	11	285	22.0	13	285	21.5	10	264	17.0	14	291	11.9	---	---	---	---	---	---	---	---	---	15	282	25.4
6,000	14	331	17.2	7	274	22.1	12	275	23.8	12	281	16.0	14	285	14.0	---	---	---	11	280	24.0	9	265	21.1	14	295	15.0	---	---	---	---	---	---	---	---	---	10	280	31.8
8,000	---	---	---	---	---	---	---	---	---	---	---	---	10	291	13.6	---	---	---	---	---	---	6	264	25.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 3.—*Free-air resultant winds based on rawin observations made near 0300 G. C. T., during February 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*

Altitude (meters) m. s. l.	Albuquerque, N. Mex. (1,636 m.)			Big Spring, Tex. (774 m.)			Bismarck, N. Dak. (505 m.)			Brownsville, Tex. (7 m.)			Caribou, Maine (191 m.)			Charleston, S. C. (13 m.)			Columbia, Mo. (237 m.)			Grand Junction, Colo. (1,473 m.)			Hatteras, N. C. (3 m.)			International Falls, Minn. (360 m.)			Little Rock, Ark. (80 m.)			Miami, Fla. (12 m.)			Nantucket, Mass. (14 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	29	107	0.5	29	111	2.6	27	95	1.0	29	127	2.7	29	268	2.7	28	330	0.8	29	85	0.9	29	87	0.7	29	17	1.7	29	250	1.2	28	61	0.8	29	52	1.7	29	341	1.6
500	---	---	---	---	---	---	---	---	---	29	153	7.2	28	281	6.9	26	211	1.9	29	190	1.5	---	---	---	26	190	1.7	28	251	3.0	28	169	.5	29	99	4.3	28	307	3.6
1,000	---	---	---	29	152	2.5	27	273	2.8	29	172	6.4	28	286	9.1	26	245	4.7	29	232	3.5	---	---	---	26	300	1.1	28	280	6.0	28	205	2.9	29	99	3.2	27	307	5.4
1,500	---	---	---	29	214	4.8	26	282	5.0	29	192	6.3	28	287	10.4	26	252	5.8	29	261	5.4	29	81	.7	26	275	3.6	28	291	8.0	28	233	6.9	29	108	1.2	27	290	8.2
2,000	29	262	3.4	29	237	8.0	26	292	7.0	29	205	6.3	28	287	12.3	25	260	6.8	28	269	7.3	29	196	1.1	25	266	6.7	29	290	9.9	28	239	9.2	29	210	.8	25	292	12.2
2,500	29	262	5.9	29	247	10.7	26	285	9.0	29	213	6.1	27	286	14.7	24	265	9.7	28	265	9.9	29	223	2.9	23	272	8.8	28	288	11.5	28	238	11.4	29	243	1.9	24	287	14.0
3,000	29	254	7.4	29	249	12.7	26	288	10.8	29	232	6.6	27	279	17.0	24	269	12.0	28	263	12.3	29	235	5.4	24	280	13.1	26	285	12.8	28	242	14.2	29	259	2.8	25	278	17.6
4,000	29	254	10.7	28	251	16.2	26	287	14.4	29	246	9.5	27	278	19.0	24	265	16.2	27	265	15.5	29	258	8.2	24	277	15.2	19	280	16.4	27	250	18.8	28	285	5.2	24	277	21.6
5,000	28	251	14.4	25	250	17.4	25	285	16.9	29	250	13.0	23	269	21.3	22	272	18.2	27	263	20.9	26	266	10.9	23	278	18.2	16	274	16.7	24	248	22.1	29	270	8.6	22	275	26.0
6,000	28	249	17.9	22	249	19.5	24	284	18.9	28	248	16.1	19	269	22.0	21	272	19.7	25	263	23.7	21	268	14.0	20	280	19.2	14	273	20.5	24	248	23.3	29	277	11.2	20	277	29.6
8,000	17	264	14.8	16	256	20.2	18	264	20.2	26	247	23.0	12	269	25.4	16	281	24.0	22	263	28.1	13	290	18.3	16	286	22.9	8	283	17.8	19	252	28.3	29	275	17.0	10	274	33.3
10,000	11	259	24.8	10	250	19.0	11	260	23.9	20	251	25.4	---	---	---	---	---	---	15	268	30.4	7	294	13.6	7	281	26.4	5	284	21.9	12	258	33.1	28	283	21.1	---	---	---
12,000	---	---	---	---	---	---	---	---	---	13	244	24.2	---	---	---	---	---	---	5	274	34.1	5	267	10.5	---	---	---	---	---	---	---	---	---	19	287	24.4	---	---	---
14,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5	281	8.9	---	---	---	---	---	---	---	---	---	8	280	35.0	---	---	---

	Nashville, Tenn. (177 m.)			New Orleans, La. (6 m.)			Oakland, Calif. (31 m.)			Oklahoma City, Okla. (391 m.)			Rapid City S. Dak. (980 m.)			San Antonio, Tex. (242 m.)			San Juan, P. R. (28 m.)			St. Cloud, Minn. (318 m.)			Santa Maria, Calif. (72 m.)			Sault Ste Marie, Mich. (224 m.)			Spokane, Wash. (721 m.)			Tatoosh Is. Wash (33 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	28	131	1.4	29	92	1.4	29	302	2.0	29	83	1.7	29	324	2.1	29	68	2.4	29	77	4.3	27	256	0.6	29	281	0.8	28	269	0.5	29	194	1.1	26	123	1.0
500	28	195	2.1	29	176	2.5	29	305	3.5	28	110	1.7	---	---	---	29	116	3.4	29	76	6.9	27	256	1.7	28	349	3.6	28	271	2.6	---	---	---	25	210	1.6
1,000	28	236	3.9	28	210	3.3	28	315	4.4	28	162	3.8	29	323	2.2	29	166	4.8	29	75	7.1	27	268	4.6	28	353	4.2	27	269	5.4	29	201	3.0	25	241	2.6
1,500	27	268	5.9	28	236	4.6	28	325	5.1	27	222	4.4	29	294	4.7	29	203	6.3	28	68	5.8	27	273	7.6	29	343	4.7	27	269	7.7	28	230	3.9	25	240	3.1
2,000	27	267	8.5	28	243	7.2	27	320	5.1	27	241	7.8	29	297	6.3	29	219	7.1	27	66	5.0	26	280	11.0	29	338	4.9	26	281	10.5	28	249	5.0	24	268	6.0
2,500	27	268	10.7	28	243	8.9	27	316	5.8	28	247	9.1	29	297	7.5	27	243	8.6	27	72	4.4	26	278	13.5	29	325	5.6	26	280	12.8	28	260	5.9	24	267	7.9
3,000	26	269	12.7	28	247	10.9	27	323	6.3	28	248	12.6	29	299	9.5	27	248	10.5	27	73	4.4	26	277	15.0	29	317	7.3	25	284	15.3	28	271	5.9	23	276	8.1
4,000	23	278	16.2	27	244	12.1	28	312	8.6	28	246	17.4	29	290	11.0	26	252	14.2	24	67	4.0	23	277	18.2	29	311	9.8	24	285	18.7	25	290	8.1	19	303	8.7
5,000	19	277	18.9	25	253	15.9	26	309	9.6	26	246	19.3	29	282	12.8	23	262	16.5	24	27	4.2	23	274	21.9	28	299	13.5	19	280	20.7	23	296	10.7	18	305	12.1
6,000	13	264	21.9	24	262	20.5	26	310	11.3	24	253	23.7	28	280	15.0	23	258	19.8	24	7	4.2	18	267	22.6	26	288	15.8	17	274	22.3	21	309	10.6	17	302	11.8
8,000	9	272	30.5	24	262	28.7	23	288	15.5	14	265	26.4	25	273	17.5	18	262	25.8	23	317	9.8	15	271	23.2	22	276	18.4	11	275	26.7	18	292	11.4	10	322	17.7
10,000	5	269	33.2	21	265	34.7	20	285	17.0	9	261	30.7	21	268	24.6	6	261	20.4	21	297	18.2	9	269	31.4	16	282	20.6	---	---	---	14	315	12.7	8	330	16.6
12,000	---	---	---	17	269	36.1	14	282	18.1	---	---	---	15	264	24.8	---	---	---	20	280	24.0	---	---	---	9	268	20.0	---	---	---	9	302	11.3	5	327	10.2
14,000	---	---	---	7	255	36.8	7	281	18.0	---	---	---	9	261	24.4	---	---	---	14	300	22.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

ADDITIONS TO AEROLOGICAL DATA FOR JANUARY 1948

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 2200 G. C. T., during January 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*

Altitude (meters) m. s. l.	St. Cloud, Minn. (318 m.)			Altitude (meters) m. s. l.	St. Cloud, Minn. (318 m.)		
	Observations	Direction	Speed		Observations	Direction	Speed
Surface	30	281	2.5	2,500	20	308	9.2
500	30	281	3.5	3,000	19	309	10.5
1,000	30	290	5.8	4,000	18	312	13.4
1,500	25	301	7.4	5,000	16	309	14.7
2,000	21	306	9.5	6,000	15	309	16.3

TABLE 3.—*Free-air resultant winds based on rawin observations made near 0300 G. C. T., during January 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*

Altitude (meters) m. s. l.	Albuquerque, N. Mex. (1,636 m.)			Big Spring, Tex. (774 m.)			Bismarck, N. Dak. (505 m.)			Brownsville, Tex. (7 m.)			Caribou, Maine (191 m.)			Charleston, S. C. (13 m.)			Columbia, Mo. (237 m.)			Grand Junction, Colo. (1,473 m.)			Hatteras, N. C. (3 m.)			International Falls, Minn. (360 m.)			Little Rock, Ark. (80 m.)			Miami, Fla. (12 m.)			Nantucket, Mass. (14 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	31	87	2.0	31	124	1.6	31	317	1.1	31	6	0.8	31	313	2.6	31	339	1.1	31	303	1.8	31	20	1.0	30	351	3.1	31	251	1.0	31	360	1.0	31	47	1.2	31	331	3.8

Altitude (meters) m. s. l.	Nashville, Tenn. (177 m.)			New Orleans, La. (6 m.)			Oakland, Calif. (31 m.)			Oklahoma City, Okla. (391 m.)			Rapid City, S. Dak. (980 m.)			San Antonio, Tex. (242 m.)			St. Cloud, Minn. (318 m.)			Sault Ste. Marie, Mich. (224 m.)			Spokane, Wash. (721 m.)			Tatoosh Is. Wash. (33 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	29	328	0.6	31	17	2.1	31	7	0.6	31	26	1.5	31	298	4.4	31	18	2.9	31	278	1.7	30	281	0.5	31	200	1.3	30	103	3.7

Altitude (meters) m. s. l.	Grand Junction, Colo. (1,473 m.)			San Juan, Puerto Rico (28 m.)			Santa Maria, Calif. (72 m.)			Altitude (meters) m. s. l.	Grand Junction, Colo. (1,473 m.)			San Juan, Puerto Rico (28 m.)			Santa Maria, Calif. (72 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed		Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	---	---	---	31	91	4.1	31	34	0.4	4,000	30	315	10.0	31	82	5.2	31	313	7.2
500	---	---	---	31	84	8.2	31	13	3.4	5,000	30	316	14.9	30	64	5.9	31	304	8.6
1,000	---	---	---	31	86	7.7	31	11	3.2	6,000	29	310	18.0	29	10	4.3	31	301	8.8
1,500	30	16	1.1	31	81	7.3	31	1	3.0	8,000	23	313	20.3	27	303	8.4	30	304	10.4
2,000	30	342	.9	31	79	6.8	31	351	3.7	10,000	13	312	19.7	26	295	15.6	25	308	13.3
2,500	30	310	1.8	31	79	6.2	31	326	4.9	12,000	7	310	18.5	27	278	22.6	17	304	31.7
3,000	30	303	4.7	31	84	6.0	31	320	5.8	14,000	---	---	---	16	290	19.8	9	321	12.8

RIVER STAGES AND FLOODS FOR FEBRUARY 1948

ELMER R. NELSON

Precipitation during February was above normal in most of the area between the Alleghenies and the Rocky Mountains. It was also above normal in the Pacific Northwest and the northeastern portion of the South Atlantic States. Precipitation was extremely heavy over New Mexico and ranged from two to four times the normal amount. It was moderately heavy over North Dakota and the northwestern quadrant of the Southern States, with monthly amounts averaging 50 percent above normal. Drought conditions prevailed again in Maine for the seventh consecutive month. Precipitation was one-half normal over Florida and the southern portions of the adjacent States.

The frequent snow during the first week of February had little effect on the depth of the snow cover except in the western mountain ranges where increases up to 2 feet were reported. During the second week, heavy snow of from 2 to 9 inches occurred over the central Great Plains, Iowa, and Missouri. The heaviest snow in the East occurred during the week-end of the 21st and covered an area from the Ohio Valley and Virginia to New England. A second storm caused light to heavy snows in the central Great Plains. A severe storm towards the end of the month caused light to heavy snow from the Dakotas to New England. The snow cover at the end of the month extended roughly along a line from New York City to the southwestern tip of New Mexico. On February 29 the greatest snow depth along the Atlantic Coast was 26 inches at First Connecticut Lake in New Hampshire; in the Ohio Valley no snow was reported; in the Lake Region, 40 inches at Ironwood, Mich.; in the Upper Mississippi Valley, 22 inches at Leech Lake Dam, Minn.; in the Missouri Valley, 23 inches at Fargo, N. Dak.; in the Mountain Region, 60 inches at Cumbres, Colo.; and along the Pacific Coast, 133 inches at Snoqualmie Pass, Wash.

During the first decade of the month the ice increased in thickness in streams of the North Central areas, the Lake Region, and the Northeastern States. Ice jams were reported on the Ohio and Potomac Rivers near the middle of the month, and the ice in the streams was generally decreasing in thickness except in the extreme northern portions. By the end of the second decade, the ice had completely disappeared from many streams in the middle latitudes, and the threatening ice jams in the Ohio and Potomac Rivers were broken. By the end of the month the ice was disappearing from the streams as far north as the Great Lakes. The ice was increasing in thickness only in northern New England, where thickness varied from 5 inches at Hartford, Conn., to 33 inches at Greenville, Maine. In the Lake Region it varied from 3.5 inches at Erie, Pa., to 31 inches at Escanaba, Mich. In the Upper Mississippi Valley the greatest ice depth reported was 26 inches at Minneapolis, Minn.; and in the Missouri Valley, 33.5 inches at Bismarck, N. Dak.

The temperatures were slightly above normal during February east of the Mississippi River, except in the New England States where the temperatures ranged from 2° to 6° below normal. West of the Mississippi, the temperatures were slightly below normal, except in the northwestern portion of the country and the southern portion of the Missouri Valley.

River stages during the month were above normal east of the Mississippi River except in the Northeastern States and at a few scattered points in the Ohio Valley. West of the Mississippi River stages were below normal in the Arkansas Basin and in California and Arizona. Record-breaking floods occurred in several streams over a broad area from Ohio to the Gulf of Mexico, and minor flooding occurred in the North-Central States from moderate rains that followed the ice break-up. Light to moderate flooding occurred along the St. Lawrence and Atlantic Slope drainage areas. On the other hand, in California and Arizona dry conditions prevailed, causing hydro-electric power shortages; and in the Northeast, although the drought decreased in area, run-off was still seriously deficient in northern New England.

St. Lawrence drainage.—Minor flooding occurred in parts of the Saginaw and upper Grand Basins at the close of February and the beginning of March. A report on the conditions that led to the flood in the Lake Michigan drainage area indicated that contributing factors were the cold and snowy weather that prevailed during the first half of February. Ice had become heavy in all streams, up to 16–18 inches in the upper Saginaw Basin. When the weather became milder during the last half of February, and rains of 1 to 1½ inches were recorded over the Upper Grand River, the combination began to break up the ice, resulting in inevitable ice jams. On the 28th, the Shiawassee at Owosso and the Red Cedar at Williamston began to overflow. By the 29th the Red Cedar at East Lansing and the Grand at Lansing left their channels. Crests were reached on the 28th or 29th and were generally minor or moderate in scope. A return to colder weather on the 29th doubtless checked the rise to some extent.

Light to moderate flooding occurred in the Lake Erie drainage in the St. Joseph, St. Marys, Maumee, and Sandusky Rivers between the 4th and the 29th. The flooding on the Maumee River resulted from backwater as the ice broke and jammed downstream. The excessive run-off from the melting snow and thawing soil caused the ice to break up. Another quick rise occurred on the Maumee River at Fort Wayne, Ind., on February 27–28 from a heavy overnight rain falling on frozen ground. The river at Fort Wayne rose from 6.6 to 16.6 feet overnight.

Atlantic Slope drainage.—Considerable flooding occurred during February along the Atlantic Slope drainage area from New York to Georgia. Light flooding occurred in the lower Potomac River 6 miles above Washington, D. C., on the 16th and 17th, due to the backwater from the severe ice jam which had formed between Key Bridge and Chain Bridge. The ice on the Potomac at Washington was the thickest it had been for several years, with 8 inches of solid ice between Key Bridge and Chain Bridge, and 10 inches above Key Bridge; there was a complete ice cover of from 4 to 8 inches in the upper Potomac, except at Cumberland, Md., which was free of ice, and tributaries were covered with 2 to 4 inches. The ice started to break up in the headwaters on the 13th due to unseasonably high temperatures, light rain, and heavy run-off from the dense snow cover, which averaged 8 inches deep above Cumberland, Md., immediately prior to this date. Minor damage occurred in the Washington area and in the headwaters in West Virginia from the crushing effects of the ice floes and was confined generally to bridges and waterfront property.

Moderate flooding occurred in the James River below Scottsville, Va., during the period February 14–17, 1948. Above Scottsville the crests were from 0.5 foot to 3.5 feet below flood stage. No damage was reported.

Flooding occurred on all of the rivers in eastern North Carolina during February. Sleet and snow which fell over the watersheds on the night of January 31, averaged nearly 8 inches in depth over the Cape Fear and Neuse

River basins, and near 15 inches over the Tar area and the upper reaches of the Roanoke River. It melted slowly, much of it remaining on the ground in protected places through a series of light rains. On the 10th, another general snowstorm covered the watersheds, with approximately the same distribution as the earlier storm. Frequent light rains from the 11th through the 13th, with considerable warming on the 13th, caused rapid melting of the snow and sleet, with all rivers in the district rising rapidly to above-flood levels. A general rain on the 21st, averaging about 0.75 inch over the watersheds, prolonged the flooded condition and caused double crests. However, the most distinguishing feature of these floods was the fact that rises in lower river sections were unusually large relative to rises in the upper reaches of the rivers. On the headwaters of the Waccamaw, a small river that rises near the mouth of the Cape Fear and flows southwestward into South Carolina, stream flow exceeded that of the unusual floods of 1945. Autumn rainfall had been unusually heavy and winter precipitation had been persistent, with few periods when appreciable drying took place. As a result, the soil had been near saturation since early autumn and the run-off rate had been high.

Approximately a thousand acres of farm lands were inundated but damage to crops was limited mostly to the overflowing of plant beds. In the Kinston area many homes and business establishments were flooded, but the chief monetary loss was due to the flooding of railways and highways, damage to bridges and abutments, and the undermining of roadbeds.

Moderate to heavy rains over South Carolina on the 12th–13th caused moderate flooding in the streams in that State. The flooding was augmented by the run-off from the melting snow. Damages resulting from the flooding were generally light, as the lowlands had not been planted because of the wet conditions prevailing in the fall. Several thousand dollars loss was credited to the suspension of logging and timber-cutting operations, although these activities had been more or less retarded since November 1947, as the swamps were full of water. A number of livestock were lost during the flooding along the Pee Dee River.

Frequent moderate to excessive rains from the 8th to the 14th caused considerable flooding along the Savannah, Ogeechee, Ocmulgee, Oconee, and Altamaha Rivers in Georgia during the month. Accumulated amounts of rainfall during this period ranged from less than 1 inch to more than 4 inches in headwater sections. The heaviest falls occurred from the 8th to the 10th, with 24-hour amounts of 1 to 3 inches at several stations. The only areas not above flood stage in the Altamaha River system included a portion of the Ocmulgee from about 25 miles north of Hawkinsville, Ga., to a point about 40 or 50 miles downstream, and the lower part of the Altamaha River from Doctortown, Ga., to the coast. The rivers exceeded flood stage over most of the Altamaha system from 2 to 9 feet. The damages in the State were light, with the greatest loss resulting from the suspension of the usual business operations along the rivers. This loss was somewhat compensated by floating out timber from points that logging trucks cannot reach under normal conditions.

East Gulf of Mexico drainage.—Considerable flooding occurred in the streams in Georgia, Alabama, and Mississippi from the heavy rain that resulted from the east-northeastward movement of the disturbance along the drainage area from the 5th to the 9th. Several stations were still in flood at the end of the month, as additional heavy rain occurred up to the 14th.

In the Apalachicola River system in Florida and Georgia, flood stage was exceeded only in the lower Apalachicola River and along 30 miles of the Flint River between Albany, Ga., and Newton, Ga. The Apalachicola River reached a stage of 21 feet at Blountstown, Fla., on the 15th and 16th, or 6 feet above flood stage; the Flint, 22.4 feet at Albany, Ga., on the 15th, or 2.4 feet above flood stage; the Etowah, 1.2 feet above at Cartersville, Ga., on the 13th; and the Oostanaula River, 6.8 feet above at Resaca, Ga., on the 15th, and 2.5 feet above at Rome, Ga., on the 14th. No damage of consequence resulted, but the monetary losses resulting from the suspension of business and the emergency costs for protecting property ran into several thousands of dollars.

In the State of Mississippi, the Pearl River went 3.2 feet above flood stage at Edinburg on the 14th; 11.1 feet above at Jackson on the 22d; 3.2 feet above at Monticello on the 26th; 1.0 feet above at Columbia on the 17th and 2.9 feet above at Pearl River, La., on the 20th. The flooding on the Pearl River was caused by heavy rain that occurred over the basin on the 8th and 9th. An average of 1.23 inches occurred over the headwaters of the Pearl River above Edinburg on the 8th. On the 9th an additional 1.23 inches occurred over the area as far south as Jackson. An average of 1.38 inches occurred over the local area above Monticello.

On the Chickasawhay River an average of 1.86 inches occurred over the local area above Waynesboro, Miss., on the 9th, causing a stage of 20.5 feet, 0.5 foot above flood stage, at Enterprise, Miss., on the 16th. Record stages were reached on the Tombigbee River at Aberdeen, Miss., on the 15th and Columbus, Miss., on the 16th. The previous maximum stage of 43.0 feet had occurred at Aberdeen on March 30, 1944, and 37.6 feet at Columbus on April 1, 1944.

In Alabama, the Tombigbee River reached a stage of 51.0 feet at Gainesville on the 21st, 15 feet above flood stage, or 0.4 foot above the record stage of April 5, 1944; 62.1 feet at Demopolis on the 23d, 23.1 feet above flood stage; 59.8 feet at Lock No. 3 on the 24th and 25th, or 26.8 feet above flood stage; 61.5 feet at Lock No. 2 on the 25th or 15.5 feet above; and 42.3 feet at Lock No. 1 on the 28th, or 11.3 feet above flood stage. The flooding on the Tombigbee River was caused by the heavy rains of February 10–14, which averaged over 6 inches in the area north of Aberdeen, Miss. The largest amount, 7.8 inches, was recorded at Booneville, Miss. The Tombigbee River in Alabama was still in flood at the end of the month below Gainesville. The Black Warrior River in Alabama reached a stage of 13.0 feet above flood stage at Tuscaloosa on the 14th and 17.8 feet above at Lock No. 7 on the 17th. The flooding was caused by the heavy rains, averaging 3.25 inches, that occurred over the basin between the 10th and 14th. The Coosa River reached a stage of 26.4 feet at Gadsden, Ala., on the 16th, or 6.4 feet above flood level; the Cahaba River crested at 26.0 feet, 3.0 feet above flood stage at Centerville, Ala., on the 9th; and the Alabama River crested at 45.5 feet, 5.5 feet above flood level at Millers Ferry, Ala., on the 16th. The damage on the Tombigbee River from Gainesville northward was considerable, but on the Black Warrior it was very small.

Upper Mississippi Basin.—Moderate to heavy rains on the 1st and 2d in the Bourbeuse and Meramec Basins caused light to moderate flooding in the Meramec River at Sullivan, Pacific, and Valley Park in Missouri. No damage resulted from this overflow as no crops had yet been planted. Flash floods occurred in the Zumbro, Whitewater, Root, and Kickapoo Rivers in southern Minnesota during the last few days of February. These

flash floods were caused by moderately heavy rain (nearly 2 inches) falling on hard frozen ground covered with 2 to 5 inches of snow. The excessive surface run-off caused the ice cover to rise in these streams, forming gorges which backed up the water over the banks. No serious damage resulted from this flooding. The only place where homes were evacuated temporarily was at Peterson, Minn., in the upper Root River drainage.

Missouri Basin.—Local flooding occurred along the Elkhorn River at Norfolk, Pilger, and Pierce in Nebraska from the 28th through the end of February and in the Missouri River at Nebraska City, Nebr., on the 22d and 27th. The flooding along the Elkhorn was due to the moderate rains on the 27th and the resulting snow melt. The ice also broke up rapidly on the 27th due to increased stream flow from the melting snow, rain, and the mild temperatures which caused ice gorges at numerous points along the Elkhorn and its tributaries. The ice in the streams was from 14 to 20 inches thick immediately prior to the break-up on the 27th.

Ohio Basin.—Light to heavy flooding occurred in the Ohio River and several of its tributaries in seven States in the Ohio Basin from the 12th to the end of the month.

In West Virginia the flooding occurred from the 13th to the 16th and was caused primarily by rapid run-off from melting snow of high water content. On the morning of February 11, the snow cover in the Little Kanawha Basin ranged from 6 to 7 inches. In the Guyandot River Basin there were 10 inches of snow on the ground on February 2. A mixture of rain and snow between the 4th and 8th reduced this snow cover to about 5 inches. Temperatures were above normal in the Little Kanawha Basin from the 12th to the 16th, averaging between 35° and 45°. Light to heavy rain occurred between the 12th and 14th. Rapid run-off from the melting snow and rain caused flooding on the Little Kanawha at Glenville and Creston, W. Va., from the 14th to the 15th. In the Guyandot River Basin warm rains began on the 10th and spread northward on the 11th through the 14th. The 24-hour amounts were never large, but the run-off from the rainfall and melting snow and ice caused all the streams in the Guyandot River watershed to go out of their banks from the headwaters to Logan, W. Va., including the smaller streams from Logan to the mouth of the river at Huntington, W. Va. One child was drowned at Logan. The crest stage at Logan was 3 feet above flood stage. Flooding occurred on the Middle Fork, Buckhannon, and Tygart Rivers between the 13th and the 15th as a result of the run-off from the rain and melting of the dense snow cover which began on the 13th. The highest water occurred at Philippi, W. Va., on the Tygart River, with a stage of 5.8 feet above flood level. The principal damage was to basements, which were flooded by the backing up of water through storm sewers and drains. One man was drowned in the upper Trout Run.

In Pennsylvania, flooding occurred on the Monongahela River from Greensboro to Braddock from the 14th to the 15th. The flooding was caused by light precipitation (½ inch) augmented by heavy snow melt. On the morning of the 13th the snow on the ground varied from 1 to 20 inches over the basin. Temperatures averaged in the middle thirties.

In the State of Ohio flooding occurred on the Hocking, Olentangy, Scioto, Stillwater, Miami, and Ohio Rivers from the 13th to the 18th. On February 11, the snow cover ranged from 4 to 10 inches over most of the State. The flooding was caused by snow melt and moderate to heavy rain that set in over the State on the 13th. The streams were generally frozen over until the rain on the 13th caused the ice to break up rapidly. No ice jams of importance resulted. The losses in the State were small and were confined mostly to highways. Floods of the same height during the growing season would have caused serious damage.

In Indiana minor flooding occurred on the East Fork, West Fork, and the Wabash Rivers from the 14th through the end of the month.

The only flooding in the State of Illinois occurred on the Ohio River from Dam No. 51 to Cairo from the 16th to the end of the month.

In the State of Kentucky flooding occurred on the Kentucky, Levisa Fork, Licking, Barren, Green, Cumberland, Tennessee, and Ohio Rivers from the 13th through the 29th. The heavy rains which fell between the 11th and 14th on frozen, snow-covered ground over the several tributaries of the Ohio River caused severe flooding of practically all of them. Resulting flow into the Ohio on the crest of the still ice-filled river caused flood stages to be passed at all points in the Louisville District from 2 to 6 feet. Normally the rains and the snow melt would probably have caused little or no flooding of the Ohio; ice conditions were an important contributing factor. Ice gorges which had formed at Madison, Ind., and at Cincinnati and above, held back considerable quantities of water at the beginning of the precipitation period which was accompanied by considerably higher temperatures. River gage readings, which would normally register negligible differences at Cincinnati and Louisville, registered 22.9 feet at Cincinnati on February 10 and only 10.0 feet at Louisville, giving evidence of the amount of water in the river constituting a potential flood danger. The average precipitation for the district amounted to 1.58 inches for the period from February 11 to February 14. No damage was reported as a result of the Ohio flooding, except for the necessity of closing many county roads near the river.

The heavy rains of February 13 resulted in a flash flood on the 13th and 14th in the town of Taylorsville, Spencer County, Ky., a town of about 1,000 population. Fed by rain and melting snow, the Salt River to the east and Brashears Creek to the west and south overflowed their banks, and the water inundated the entire town to depths of 3 to 7 feet, according to reports. The water reached its highest level at about 4 a. m. on the 14th and then subsided quickly. No deaths resulted and the total damage was estimated at about $75,000.

In the State of Tennessee, beginning on the 13th, a major flood occurred throughout the Cumberland River Basin due to the heavy rainfall that occurred from the 12th to the 14th. Several stations reported 24-hour amounts of rainfall from 7½ to 8 inches. The Cumberland crested at a stage of 11.7 feet above flood stage at Celina on the 18th; 13.9 feet above at Carthage on the 15th; 9.7 feet above at Nashville on the 18th; 9.8 feet above at Clarksville on the 16th; and 13.5 feet above at Eddyville on the 23d. A major flood also occurred in the Tennessee River Valley, with the streams cresting from slightly above flood level to nearly 20 feet above flood stage during the period February 12–22. This flood was caused by frequent light rains and snow which occurred over the basin from the middle of January to February 10, and additional heavy rain over the area from the 11th to the 14th. The total rainfall for the storm period averaged nearly 5 inches. Only a small percent of the rain fell over the tributaries of eastern Tennessee. The heaviest rains occurred over the Duck River, where between 8 and 9 inches of rain fell over the basin, mostly during the 48-hour period of the 12th and 13th.

Most of the flooding on the main stream below Chattanooga was confined to agricultural lowlands and secondary roads. In Knoxville, Tenn., 53 families were forced to evacuate their homes when First Creek rose approximately 3 feet above flood stage. Several stores and warehouses also had to be evacuated or banked with sandbags. Damages on the Duck River and other smaller tributaries were heavy. On the main stream below Chattanooga damage was relatively light.

Arkansas and Red Basin.—Minor flooding occurred in the Arkansas Basin on the Poteau River near Poteau, Okla., during the latter part of February. This flooding was caused by an average rainfall of 2.20 inches over the basin from the 25th to the 27th. The heaviest amount reported during this period was 2.48 inches at Poteau. No damages resulted from this overflow.

Minor flooding occurred in the Red Basin in Texas at Hagansport, from the 7th to the 8th and at Naples from the 9th to the 20th.

Lower Mississippi Basin.—Flooding occurred in the Lower Mississippi Basin along the Coldwater, Tallahatchie, and Yazoo Rivers in Mississippi and in the Mississippi River from New Madrid, Mo., to Caruthersville, Mo., between the 13th and the 29th. This flooding was due to heavy rains which ranged from 5 to 7 inches over the Tallahatchie and upper Yazoo River Basins between the 12th and the 14th. Run-off from the rains was heavy, as the ground was well saturated before this storm period. These heavy rains were caused by a disturbance that originated over the southern Rockies. The storm moved across New Mexico into Mexico, after which it recurved and moved northeastward across Louisiana into southwestern Indiana. Several million dollars of damage resulted, as approximately 690,000 acres were overflowed in the Yazoo-Tallahatchie-Coldwater River system.

West Gulf of Mexico drainage.—Flooding occurred along the Sabine River in Texas from the 8th through the 29th. The Sabine rose gradually from below flood stage on the 1st to flood stage at Mineola on the 8th. This overflow was caused by precipitation that averaged less than 1 inch in any 24-hour period plus some snow melt on the 1st. The greatest damage from this flood was to oil fields at Gladewater, Tex.

Pacific Slope drainage.—Flooding occurred in the Columbia River Basin for the second consecutive month. It was not a major flood, as the one in January, but it was of more than ordinary importance. The freshet of February 22–26 was caused primarily by the heavy rain of the 21st and 22d that fell on a soil that was already well saturated from the light to moderate rain of the preceding week, and to a minor extent by the snow melt at higher elevations. Flooding occurred along the Willamette River from Eugene, Oreg., to Oregon City, Oreg., a distance of 137 miles. Flooding also occurred on several tributaries of the Willamette, namely, the Coast Fork, McKenzie, Santiam, South Yamhill, Molalla, and Tualatin Rivers. The flooding on the lower Santiam River exceeded that of the other tributaries. The major damage resulting from the freshet was to river banks, revetments and erosion of top soil. There was only minor damage to tangible property.

Flooding occurred in the Palouse River at Colfax and Pullman, Wash., at the time flooding was well under way in the Willamette River. The South Palouse River continued at near-flood stage through January and early February and crested at approximately 10 p. m., on February 26. No stages are available for this river. The water inundated the trailer camp, damaging 117 trailers. The business section of Pullman was flooded, and sections of Colfax were under water. Some damage occurred in the rural areas in the vicinity of the two towns. Only minor damage was done to residences in the vicinity.

FLOOD STAGE REPORT FOR FEBRUARY 1948

[All dates in February unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE					
Lake Michigan					
Red Cedar:	*Feet*			*Feet*	
Williamston, Mich.	7	28	28	7.9	28
East Lansing, Mich.	8	29	(2)	9.3	29
Grand: Lansing, Mich.	11	29	(2)	11.0	29
Shiawassee: Owosso, Mich.	7	29	(2)	7.1	29
Lake Erie					
St. Marys: Decatur, Ind.	13	17	(2)	15.3	19
St. Joseph: Montpelier, Ohio.	10	20	24	13.3	21
Maumee:					
Fort Wayne, Ind.	15	28	(2)	16.6	29
Defiance, Ohio.	10	19	23	13.5	20
Napoleon, Ohio.	10	19	19	10.5	19
Sandusky: Upper Sandusky, Ohio.	13	14	15	14.2	15
ATLANTIC SLOPE DRAINAGE					
Lehigh: Lehighton, Pa.	9	21	21	9.1	21
Chenango: Sherburne, N. Y.	8	20	20	8.2	20
Chemung: Chemung, N. Y.	12	20	20	12.0	20
Susquehanna: Oneonta, N. Y.	12	20	20	13.35	20
Potomac: Washington (near), D. C.	10	16	16	10.6	16
		16	17	10.1	17
James:					
Bremo Bluff, Va.	19	14	16	23.5	15
Columbia, Va.	18	14	16	24.9	15
State Farm, Va.	12	15	17	16.4	16
Richmond, Va.	8	15	17	11.5	16
Dan: Clarksville, Va.	13	16	16	13.3	16
Roanoke:					
Alta Vista, Va.	10	14	16	22.4	15
Randolph, Va.	21	15	17	26.4	16
Weldon, N. C.	31	15	19	41.8	17
Scotland Neck, N. C.	28	15	22	33.8	18
Williamston, N. C.	10	10	(2)	13.1	22
Tar:					
Rocky Mount, N. C.	9	14	19	10.8	16
Greenville, N. C.	13	9	25	17.8	19
Neuse:					
Neuse, N. C.	14	7	10	15.1	9
		14	20	19.3	17
Smithfield, N. C.	13	7	22	20.4	16
Goldsboro, N. C.	14	7	(2)	24.5	19
Kinston, N. C.	14	8	(2)	20.8	22
Cape Fear:					
Moncure, N. C.	20	14	15	21.7	15
Fayetteville, N. C.	35	14	17	49.7	16
Lock No. 2, Elizabethtown, N. C.	20	6	21	32.9	17
Lynches: Effingham, S. C.	14	14	21	14.7	16
Waccamaw: Conway, S. C.	7	11	(2)	8.5	24, 25
Pee Dee:					
Cheraw, S. C.	30	13	17	39.0	14
Pee Dee, S. C.	19	8	27	26.4	19
Black: Kingstree, S. C.	12	11	18	12.8	14, 15
Saluda:					
Pelzer, S. C.	6	12	16	7.0	14
Chappells, S. C.	13	9	10	14.5	9
Broad:					
Gaffney, S. C.	10	13	13	11.2	13
Blairs, S. C.	14	13	15	20.5	14
Catawba: Catawba, S. C.	11	13	14	14.7	13
Waterce: Camden, S. C.	23	14	16	27.7	14
Edisto:					
Orangeburg, S. C.	8	9	20	9.5	14
		23	24	8.1	24
Givhans Ferry, S. C.	10	2	(2)	13.7	15, 16
Savannah: Butler Creek, Ga.	21	9	16	23.7	10
Ogeechee:					
Midville, Ga.	6	11	11	6.0	11
		13	18	6.8	14
Dover, Ga.	7	Jan. 21	(2)	9.0	14, 18
Ocmulgee:					
Macon, Ga.	18	10	13	20.0	11
Abbeville, Ga.	11	12	25	14.8	17
Lumber City, Ga.	12	----------	----------	16.0	21
Oconee:					
Milledgeville, Ga.	20	9	15	26.6	10
Dublin, Ga.	21	13	19	24.6	16
Mt. Vernon, Ga.	16	14	24	19.1	18
Altamaha:					
Charlotte, Ga.	12	Jan. 25	(2)	20.7	21
Piney Bluff, Ga.	17	12	(2)	21.0	21
EAST GULF OF MEXICO DRAINAGE					
Flint: Albany, Ga.	20	14	18	22.4	15
Apalachicola: Blountstown, Fla.	15	Jan. 25	(2)	21.0	15, 16
Oostanaula:					
Resaca, Ga.	22	13	18	28.8	15
Rome, Ga.	25	13	17	27.5	14

See footnotes at end of table.

FLOOD STAGE REPORT FOR FEBRUARY 1948—Continued

[All dates in February unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
EAST GULF OF MEXICO DRAINAGE—con.					
	Feet			*Feet*	
Etowah: Cartersville, Ga.	18	13	14	19.2	13
Coosa: Gadsden, Ala.	20	9	23	26.4	16
Cahaba: Centerville, Ala.	23	9	10	26.0	9
Alabama: Millers Ferry, Ala.	40	12	23	45.5	16
Black Warrior:					
Tuscaloosa Lock and Dam, Ala.	47	8	17	60.0	14
Lock No. 7, Eutaw, Ala.	35	9	26	52.8	17
Tombigbee:					
Aberdeen, Miss.	34	13	20	44.1	15
Columbus, Miss.	29	14	21	38.3	16
Gainesville, Ala.	36	10	Mar. 2	51.0	21
Lock No. 4, Demopolis, Ala.	39	9	(3)	62.1	23
Lock No. 3, Whitfield, Ala.	33	Jan. 31	6	40.0	3
		7	(3)	59.8	24, 25
Lock No. 2, Pennington, Ala.	46	10	(3)	61.5	25
Lock No. 1, Salitpa, Ala.	31	11	(3)	42.3	28
Chickasawhay: Enterprise, Miss.	20	16	16	20.5	16
Pearl:					
Edinburg, Miss.	20	10	20	23.2	14
Jackson, Miss.	18	8	(3)	29.1	22
Monticello, Miss.	15	11	18	18.2	26
		20	(3)		
Columbia, Miss.	17	15	18	18.0	17
		26	(3)	17.5	28
Pearl River, La.	12		10	14.9	20
		13	(3)		
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Pecatonica: Freeport, Ill.	10	28	(3)	14.7	29
Rock: Moline, Ill.	10	28	(3)		
Cedar: Waterloo, Iowa.	15	29	(3)		
Iowa: Wapello, Iowa.	10	29	(3)		
Zumbro: Thielman, Minn.	35	28	(3)	37.9	29
Whitewater: Beaver, Minn.	7	28	28	8.3	28
Root: Houston, Minn.	15	28	Mar. 1	17.5	29
Skunk: Augusta, Iowa.	15	19	20	15.5	20
		29	(3)		
Illinois:					
Morris, Ill.	13	28	(3)	15.3	29
Peru, Ill.	17	28	Mar. 1	18.9	29
Meramec:					
Sullivan, Mo.	11	2	2	12.2	2
Pacific, Mo.	11	3	4	14.4	3
Valley Park, Mo.	14	3	4	17.4	3
Mississippi:					
Hanibal, Mo.	13	20	(3)		
Louisiana, Mo.	12	19	25	13.6	22
		29	(3)		
Missouri Basin					
Little Blue:					
Endicott, Nebr.	9	27	(3)	12.8	28
Hanover, Kans.	14	28	(3)	17.7	29
Big Blue:					
Beatrice, Nebr.	16	28	Mar. 1	20.6	29
Barnston, Nebr.	18	27	Mar. 1	23.1	28
				22.9	29
Blue Rapids, Kans.	20	27	Mar. 1	26.3	27–28
				25.9	Mar. 1
Randolph, Kans.	22	Mar. 1	Mar. 1	22.3	Mar. 1
Elkhorn:					
Norfolk, Nebr.	10	28	(3)	12.5	28
Pilger, Nebr.	12	29	(3)	12.6	29
Pierce (near), Nebr.	12	28	28	13.1	28
Grand: Chillicothe, Mo.	18	28	(3)	25.5	28
Floyd: James, Iowa.	14	17	19	17.0	18
Missouri: Nebraska City, Nebr.	15	22	22	15.1	22
		27	27	18.4	27
Ohio Basin					
Allegheny:					
Parkers Landing, Pa.	20	16	17	21.8	16
Lock No. 8, Mosgrove (near), Pa.	24	20	20	25.0	20
Lock No. 5, Shenley, Pa.	24	20	20	24.0	20
Cheat: Rowlesburg, W. Va.	12			12.0	14
Middle Fork: Midvale, W. Va.	11	13	14	14.0	14
Buckhannon: Hall, W. Va.	12	13	15	15.0	14
Tygart:					
Dailey, W. Va.	9	14	15	12.4	14
Belington, W. Va.	14	14	15	16.3	14
Philippi, W. Va.	17	14	15	22.8	14
West Fork:					
Weston, W. Va.	17	14	14	20.1	14
Clarksburg, W. Va.	7	14	15	10.2	14
Monongahela:					
Lock No. 7, Greensboro, Pa.	30	14	15	38.6	14
Lock No. 5, Brownsville, Pa.	23.5	14	15	28.6	14
Lock No. 4, Charleroi, Pa.	30	14	15	30.8	14
Lock No. 3, Elizabeth, Pa.	23	14	15	26.8	15
Lock No. 2, Braddock, Pa.	20.5	14	15	25.3	15

See footnotes at end of table.

FLOOD STAGE REPORT FOR FEBRUARY 1948—Continued

[All dates in February unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM—continued					
Ohio Basin—Continued					
Little Kanawha:	*Feet*			*Feet*	
Glenville, W. Va.	23	14	15	26.3	14
Creston, W. Va.	20	14	15	22.7	14
Hocking:					
Enterprise, Ohio.	12	14	15	14.6	14
Athens, Ohio.	17	14	16	19.5	15
Guyandot: Logan, W. Va.	20	13	14	23.0	14
Levisa Fork: Pikeville, Ky.	36	14	15	36.2	15
Olentangy: Delaware, Ohio.	9	14	15	10.0	15
Scioto:					
La Rue, Ohio.	11	14	17	12.3	15
Circleville, Ohio.	14	15	17	18.7	15
Chillicothe, Ohio.	16	15	17	20.3	16
Piketon, Ohio.	15	14	18	22.2	15
Little Miami: Kings Mills, Ohio.	17	13	14	20.7	14
Licking: Falmouth, Ky.	28	13	15	33.5	14
Stillwater: Pleasant Hill, Ohio.	13	14	15	14.4	15
Miami: Middletown, Ohio.	15	14	15	15.6	15
North Fork: Jackson, Ky.	29	13	15	41.6	14
Kentucky:					
Lock No. 14, Heidelberg, Ky.	30	14	15	31.3	15
Lock No. 10, Ford, Ky.	30	15	17	33.3	16
Lock No. 4, Frankfort, Ky.	31	15	19	35.3	18
Rough: Dundee, Ky.	25	14	19	27.6	17
Barren: Bowling Green, Ky.	28	14	18	39.6	15
Green:					
Munfordville, Ky.	28	14	18	39.9	16
Lock No. 6, Brownsville, Ky.	28	14	20	40.7	17
Lock No. 4, Woodbury, Ky.	33	14	22	47.0	17
Lock No. 2, Rumsey, Ky.	34	16	(3)	41.1	23
West Fork:					
Anderson, Ind.	10	15	15	10.5	15
Edwardsport, Ind.	12	17	21	13.3	19
East Fork: Seymour, Ind.	14	14	15	15.5	14
Wabash:					
Bluffton, Ind.	10	17	17	10.7	17
Wabash, Ind.	12	16	16	13.5	16
		28	(3)	15.7	28
Lafayette, Ind.	11	18	19	13.8	18
		29	(3)	16.3	29
Covington, Ind.	16	20	20	18.9	19
		29	(3)	16.4	29
New: New River, Tenn.	18	13	14	28.2	14
Cumberland:					
Williamsburg, Ky.	19	13	17	26.6	15
Burnside, Ky.	50	14	15	66.3	14
Celina, Tenn.	40	15	20	51.7	18
Carthage, Tenn.	40	13	21	53.9	15
Nashville, Tenn.	40	13	24	49.7	18
Clarksville, Tenn.	46	14	26	55.8	16
Lock F, Eddyville, Ky.	50	15	Mar. 2	63.5	23
French Broad: Asheville, N. C.	6	12	14	6.6	12, 14
Elk: Prospect, Tenn.	21	12	18	38.1	14
Duck: Columbia, Tenn.	32	12	17	51.75	14
Tennessee:					
Chattanooga, Tenn.	30	13	15	33.8	14
Guntersville, Tenn.	50	12	20	62.2	15
Florence, Ala.	18	12	20	25.8	14
Pickwick Dam, Tenn.	43	12	21	54.1	16
Savannah, Tenn.	39	13	22	50.7	17
Kentucky Dam, Ky.	31	13	(3)	50.1	19, 20
Ohio:					
Midland, Pa.	30	15	15	32.2	15
Point Pleasant, W. Va.	40	15	17	43.7	16
Dam No. 28, Huntington, W. Va.	50	16	17	51.1	16
Dam No. 29, Ashland, Ky.	51	15	18	54.7	16
Dam No. 30, near Greenup, Ky.	52	15	18	55.0	17
Portsmouth, Ohio.	50	16	18	53.3	17
Dam No. 33, near Maysville, Ky.	50	16	19	53.0	17
Dam No. 34, Chilo, Ohio.	49	17	19	50.4	18
Cincinnati, Ohio.	52	17	19	54.0	18
Dam No. 37, Fernbank, Ohio.	50	17	20	53.6	18
Dam No. 39, Markland, Ind.	48	18	19	48.3	19
Dam No. 41, Louisville, Ky.—					
Upper gage.	28	17	21	31.7	20
Lower gage.	55	17	21	58.4	20
Dam No. 43, Evans Landing, Ind.	57	18	21	59.8	20
Dam No. 44, Leavenworth, Ind.	53	17	23	39.3	20
Dam No. 45, Addison, Ky.	47	17	23	51.1	20
Tell City, Ind.	38	17	24	43.8	20
Dam No. 46, Owensboro, Ky.	41	19	24	42.7	21
Dam No. 47, Newburgh, Ind.	38	17	28	47.7	21
Evansville, Ind.	42	21	24	42.6	22
Dam No. 48, near Henderson, Ky.	38	18	28	44.2	22
Mount Vernon, Ind.	35	18	(3)	41.2	23
Dam No. 49, Uniontown, Ky.	37	19	(3)	42.2	24
Shawneetown, Ill.	33	17	(3)	42.4	24
Dam No. 50, Fords Ferry, Ky.	34	17	(3)	45.5	25
Dam No. 51, Golconda, Ill.	40	19	(3)	44.1	25
Paducah, Ky.	39	17	Mar. 1	45.8	22
Dam No. 52, Brookport, Ill.	37	16	(3)	47.2	22
Dam No. 53, near Mound City, Ill.	42	16	(3)	50.4	22
Cairo, Ill.	40	17	(3)	46.8	23

See footnotes at end of table.

FLOOD STAGE REPORT FOR FEBRUARY 1948—Continued

[All dates in February unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM—continued					
White Basin					
	Feet			*Feet*	
Current: Doniphan, Mo.	10	2	2	11.5	2
Black: Poplar Bluff, Mo.	16	2	5	18.1	3
Arkansas Basin					
Poteau: Poteau, Okla.	21	26	(2)	28.5	28
Red Basin					
Sulphur:					
Hagansport, Tex.	38	7	8	38.4	7
Naples, Tex.	22	9	20	24.9	13
Lower Mississippi Basin					
Coldwater: Sarah, Miss.	18	13	16	21.6	13
Tallahatchie: Swan Lake, Miss.	26	13	(2)	32.2	17
Yazoo:					
Greenwood, Miss.	35	16	(2)	40.0	21
Yazoo City, Miss.	29	22	(2)	31.6	
Mississippi:					
New Madrid, Mo.	34	21	(2)	36.5	25, 26, 27
Caruthersville, Mo.	32	21	(2)	34.7	26–27
Atchafalaya Basin					
Atchafalaya: Atchafalaya, La.	25	26	(2)	25.6	29

See footnotes at end of table.

FLOOD STAGE REPORT FOR FEBRUARY 1948—Continued

[All dates in February unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
WEST GULF OF MEXICO DRAINAGE					
Sabine:	*Feet*			*Feet*	
Mineola, Tex.	14	8	17	16.3	13
Gladewater, Tex.	26	14	21	28.0	18
Logansport, Tex.	25	15	16	25.2	15
Bon Wier, Tex.	17	12	20	18.1	15
		22	(2)	17.6	26
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Coast Fork: Saginaw, Oreg.	9	22	22	9.5	22
McKenzie:					
Leaburg, Oreg.	12	22	22	17.7	22
Armitage Bridge, Oreg.	11	22	22	13.5	22
Santiam: Jefferson, Oreg.	13	22	24	19.9	22
South Yamhill:					
Willamina, Oreg.	8	22	22	9.8	22
Whiteson, Oreg.	38	23	23	39.9	23
Tualatin: Dilley, Oreg.	12	22	22	12.1	22
Willamette:					
Eugene, Oreg.	12	22	22	13.6	22
Harrisburg, Oreg.	12	22	24	17.2	23
Corvallis, Oreg.	20	23	24	23.2	23
Albany, Oreg.	20	24	24	23.3	24
Oregon City, Oreg.	12	24	26	13.0	25
Snohomish Basin					
Snohomish: Snohomish, Wash.	20	27	27	20.4	27

[1] Provisional. [2] Continued at end of month.

CLIMATOLOGICAL DATA FOR FEBRUARY 1948

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see REVIEW, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature								Precipitation					
			Monthly extremes								Greatest monthly		Least monthly	
	Section average	Departure from the normal	Station	Highest	Date	Station	Lowest	Date	Section average	Departure from the normal	Station	Amount	Station	Amount
	°F.	°F.		°F.			°F.		In.	In.		In.		In.
Alabama	52.1	+3.2	Eufaula	86	28	Madison	14	1	6.31	+1.06	Waterloo	14.04	Spring Hill	0.91
Arizona	43.1	−2.8	2 stations	89	1 18	Alpine	−28	12	1.56	+.26	Junipine	4.54	Mohawk	.01
Arkansas	41.5	−2.1	Okay	82	29	Gravette	8	14	6.08	+2.54	Clarendon	11.15	Gravette	3.04
California	44.7	−3.0	Indio	91	20	Boca	−20	12	2.17	−2.29	Elk Valley	12.98	Greenland Ranch	.00
Colorado	24.2	−3.0	Wray	72	26	2 stations	−35	13	1.30	+.33	Wolf Creek Pass	12.07	Otis	.06
Florida	64.2	+3.7	4 stations	90	1 8	4 stations	27	1	1.07	−1.97	Glen Saint Mary	4.98	5 stations	.00
Georgia	51.2	+2.6	Waycross	87	29	Blairsville	16	2	5.05	+.26	Dalton	11.77	Valdosta	.79
Idaho	28.0	−.1	Kooskia	69	1 18	Island Park Dam	−37	12	2.10	+.35	Roland	7.05	Mud Lake	T
Illinois	30.3	+.4	Olney	72	18	Rockford Airport	−14	9	2.14	+.23	Anna	3.94	Alton	.88
Indiana	31.0	+1.0	Jeffersonville	75	18	2 stations	−10	9	2.70	+.28	N. Vernon	5.60	Noblesville	.97
Iowa	23.2	+.4	Knoxville	67	17	Decorah	−29	12	1.90	+.80	Allison	3.00	Osage	.90
Kansas	30.9	−2.4	Ashland	79	18	Bison	−15	13	1.62	+.63	Hanover No. 2	4.48	Goodland	.31
Kentucky	38.8	+1.7	2 stations	79	28	Quicksand	−5	3	5.01	+1.56	Burnside	8.68	Mt. Sterling	2.96
Louisiana	53.6	−.2	do	90	1 6	Plain Dealing	18	1	4.22	−.21	Lake Providence	9.33	Port Sulphur	.37
Maryland-Delaware	34.3	+1.0	2 stations, Md	82	28	Oakland, Md	−11	9	2.24	−.70	Sines, Md	4.15	Germantown, Md	1.13
Michigan	19.6	−.7	Monroe	60	20	Kenton	−39	4	1.69	.00	Mt. Clemens	4.53	Atlanta	.51
Minnesota	10.5	−2.1	Albert Lea	54	26	Meadowlands	−43	3	1.45	+.68	Hinckley	2.67	Big Falls	.20
Mississippi	49.1	−.3	3 stations	85	1 8	2 stations	10	10	7.57	+2.62	New Albany	14.68	Biloxi	.77
Missouri	33.3	.0	Ozark Beach	78	18	6 stations	−9	8	2.16	+.07	Deering	5.42	Bethany	.36
Montana	20.0	−2.3	2 stations	67	17	West Yellowstone	−39	11	1.01	+.25	Summit	5.69	Choteau	.01
Nebraska	25.4	−1.1	Cambridge	75	18	Niobrara	−22	8	.94	+.25	Wymore	3.61	Mullen	.08
Nevada	32.2	−2.0	Las Vegas	79	20	Fish Creek Ranch	−21	1 3	.67	−.39	Lehman Caves, N. Mex.	2.21	Lathrop Wells	.00
New England	18.7	−3.9	3 stations	56	1 14	First Conn. Lake, N. H.	−41	10	2.05	−.99	Whitingham, Vt	4.36	Bangor, Maine	.63
New Jersey	29.6	−1.1	Pemberton	70	19	Layton	−2	1	2.47	−1.00	Hammonton	4.51	Manville	1.35
New Mexico	35.4	−2.3	Lake McMillan	82	19	Eagle Nest	−44	12	1.64	+.94	Red River	3.87	Carlsbad	.41
New York	20.9	−1.5	3 stations	64	19	Stillwater Reservoir	−40	10	2.27	−.38	Salisbury	4.29	Addison	.78
North Carolina	43.5	+.9	Louisburg	84	28	Louisburg	2	3	4.75	+.73	Andrews	9.66	Manteo	1.72
North Dakota	7.1	−2.7	Medora	60	18	Belcourt	−37	8	.99	+.52	Hillsboro	1.89	Hansboro	.30
Ohio	30.7	+1.3	2 stations	74	1 18	2 stations	−21	9	3.06	+.47	Higginsport	4.61	Ellsworth	1.08
Oklahoma	37.6	−3.5	Poteau	81	18	Beaver	−15	13	2.88	+1.40	Carnasan Tower	6.42	Newkirk	.59
Oregon	33.2	−2.2	Lake Creek	77	25	Chemult	−22	12	3.99	+.82	Valsetz	23.83	Plush	.08
Pennsylvania	28.3	.0	Phoenixville	75	20	4 stations	−25	1 1	2.07	−.79	Kregar	3.98	Covington	.62
South Carolina	47.4	.0	2 stations	85	1 26	Caesars Head	15	22	4.88	+.72	Calhoun Falls	7.56	Batesburg	1.90
South Dakota	16.9	−2.4	Longvalley	72	17	Castlewood	−31	8	.70	+.14	Clear Lake	1.94	Winner	T
Tennessee	42.3	+1.1	3 stations	78	28	Union City	1	1	8.81	+4.31	Savannah	15.05	Tri-City Airport	4.33
Texas	49.1	−2.2	2 stations	92	1 20	Miami	−7	13	2.56	+.78	Bronson	6.53	Pecos	T
Utah	28.1	−1.9	St. George	71	21	Woodruff	−40	12	1.31	+.03	Alta	4.73	Callao	.00
Virginia	38.3	+1.1	Fredericksburg	85	28	2 stations	−6	1 2	2.62	−.42	Pennington Gap	6.63	Amissville	.62
Washington	32.4	−1.9	Shelton	71	17	Bumping Lake	−17	12	5.46	+1.81	Quinalt	19.95	Lost Creek	.10
West Virginia	35.8	+2.5	Romney	79	28	3 stations	−14	1 7	3.61	+.50	Pickens No. 2	7.34	Wardensville	.65
Wisconsin	16.8	−.4	Kenosha	57	26	Mellen	−42	4	1.62	+.43	Ripon	2.64	Rainbow Reservoir	.57
Wyoming	20.7	−1.6	Pine Bluffs	67	26	Foxpark	−43	6	.84	+.07	Snake River	4.27	Diversion Dam	.02
Alaska (Jan.)	6.5	+3.6	Sitka	49	14	Umiat	−56	5	3.20	+.97	Latouche	32.71	Wainwright	.04
Hawaii	67.6	−1.0	2 stations	87	1 19				5.63	−1.53	Alakahi (upper)	14.25	Kalae	1.33
Puerto Rico	73.7	+.6	Ponce	95	11	2 stations	51	1 28	2.38	−.45	Rio Blanco (1,800' elev.)	7.59	Potala	.00

1 Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR FEBRUARY 1948

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Mean	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunder storms
NEW ENGLAND	*Ft.*	*Ft.*	*Ft.*	*Mb.*	*Mb.*	*Mb.*	° *F.*	° *F.*	°*F.*		°*F.*	° *F.*		° *F.*	° *F.*		° *F.*	%	*In*	*In.*	*In.*		*Mi.*								*0–10*	*In.*	*In.*	
Eastport	75	67	82	1,018.6	1,021.7	+7.8	22.6	−2.8										75	2.16	−1.2											6.1			
Portland, Maine [2]	103	6	43	1,018.6	1,022.7	+7.1	18.0	−3.6	48	14	27	−9	4	9	37	1,364	8	66	1.90	−1.6	.90	11	11.9	nw.	34	w.	15	11	6	12	5.4	12.8	11.1	0
Concord [2]	289	5	45	1,011.9	1,023.0	+7.1	18.2	−2.6	52	14	31	−19	10	5	43	1,355	10	72	1.64	−2.5	.96	10	9.2	n.	33	nw.	18	12	7	10	5.1	12.3	6.6	0
Burlington [2]	403	6	51	1,006.8	1,022.7	+6.1	16.4	−3.9	52	17	32	−26	10	1	50	1,410	8	76	1.53	−1.5	.75	12	6.9	nw.	30	nw.	8	8	7	14	6.0	13.7	10.7	0
Boston [2]	124	33	62	1,018.3	1,023.1	+7.5	14.9	−4.5	46	17	28	−26	10	2	41	1,450	8	77	1.01	−.6	.37	13	10.5	s.	37	s.	19	8	8	13	5.8	9.8	7.4	0
Nantucket [2]	12	4	34	1,022.4	1,022.7	+7.8	26.6	−2.2	54	17	35	2	10	18	26	1,118	17	69	2.08	−1.4	.88	11	11.9	nw.	33	w.	14	8	8	13	6.0	17.0	5.6	0
Block Island	26	11	46	1,021.3	1,022.4	+6.8	29.2	−1.5	51	14	36	9	11	23	26	1,037	24	82	3.79	+.4	1.45	15	14.6	ne.	34	ne.	22	6	4	19	7.0	14.2	.7	1
Providence [2]	159	65	60	1,016.9	1,023.4	+7.1	29.2	−1.2	51	14	35	8	10	23	23	1,038	25	84	3.19	−.6	1.33	12	17.2	nw.	42	sw.	14	8	6	15	6.4	10.9	3.0	0
Hartford [2]	159	5	44	1,017.6	1,023.7	+7.1	27.3	−1.7	55	17	36	1	10	19	30	1,092	16	70	2.34	−1.4	.80	11	8.8	n.	40	sw.	14	7	8	14	6.4	12.4	2.7	0
							23.2	−4.0	53	17	34	−9	11	13	36	1,214	17	79	1.96	−2.0	.67	10	8.6	n.	34	nw.	14	7	8	14	6.4	15.0	3.8	0
MIDDLE ATLANTIC																																		
Albany [2]	97	6	40	1,011.9	1,023.0	+5.7	33.2	+.2										75	2.42	−.9											6.6			
Binghamton [4]	871	57	79	990.5	1,023.7	+6.4	18.2	−3.2	49	17	30	−21	10	6	42	1,355	10	73	2.08	−.5	.99	10	10.1	w.	38	w.	14	8	9	12	6.1	17.6	9.8	1
New York [4]	314	415	454	1,012.2	1,024.4	+7.1	23.4	−.6	56	19	34	−18	1	13	46	1,206	14	80	1.71	−.7	.72	12	6.4	w.	25	w.	14	6	6	17	6.6	6.5	T	1
Harrisburg [2]	374	30	49	1,009.5	1,023.7	+5.4	31.2	−.1	56	18	39	7	9	24	32	980	20	66	2.49	−1.5	.59	10	14.2	n.	48	nw.	14	6	7	16	6.7	12.5	.0	0
Philadelphia [4]	114	174	150	1,019.3	1,023.7	+5.4	30.1	−.1	66	19	39	2	10	21	31	1,011	20	70	1.28	−1.8	.34	12	7.6	nw.	34	nw.	14	5	12	12	6.6	15.0	T	0
Reading	323	47	306	1,011.9	1,024.4	+6.1	33.4	−.5	68	19	41	10	10	26	30	914	24	80	3.17	−.3	.95	12	8.3	n.	21	nw.	29	7	9	13	6.3	13.0	.0	0
Scranton	805	72	104	993.2	1,023.7	+5.7	31.2	+.7	65	19	40	5	1	22	30	982	----	----	2.07	−1.5	.57	10	10.7	nw.	43	se.	19	5	8	16	7.0	17.2	.0	0
Atlantic City	52	37	172	1,021.3	1,023.4	+5.8	26.4	−.9	58	19	35	−5	1	18	36	1,115	----	----	1.10	−2.0	.44	9	6.9	n.	32	nw.	14	7	12	10	6.1	5.4	T	0
Trenton	190	89	107	1,016.6	1,023.7	+6.1	34.4	+.8	65	18	41	12	9	27	26	885	28	76	3.36	−.1	.87	11	17.1	n.	47	s.	14	5	7	17	7.2	7.1	.0	0
Baltimore [4]	123	100	215	1,019.3	1,024.0	+5.4	31.2	+.5	68	19	39	7	9	23	32	983	----	----	2.27	−1.1	.68	11	9.4	n.	29	nw.	29	7	9	13	6.3	10.3	.0	0
Washington [4]	112	56	100	1,020.0	1,024.4	+5.8	36.6	+1.2	71	19	45	11	10	29	32	820	24	72	1.89	−1.6	.82	12	9.2	n.	44	w.	14	5	13	11	6.2	10.4	.0	0
Cape Henry	18	8	54	1,022.0	1,022.7	+4.7	37.4	+2.0	81	28	47	11	10	28	35	797	26	67	2.05	−1.3	.81	11	7.5	n.	33	nw.	14	7	8	14	6.5	9.3	.0	0
Lynchburg [2]	686	5	58	997.6	1,023.4	+4.8	41.7	+.5	79	28	49	22	9	34	32	674	36	82	3.95	+.6	1.07	14	14.0	n.	43	n.	1	5	7	17	7.0	15.0	.0	0
Norfolk [4]	91	80	125	1,020.0	1,023.4	+4.8	39.2	+.9	79	28	48	15	10	30	33	746	29	78	2.69	−.6	1.48	15	9.3	ne.	30	sw.	28	5	10	14	6.6	13.0	.0	0
Richmond [4]	144	11	52	1,017.3	1,022.7	+3.7	43.1	+.4	78	28	51	22	9	35	27	638	34	80	3.65	+.3	1.09	15	11.6	n.	34	nw.	14	4	8	17	7.1	11.8	.0	0
							40.9	+1.3	81	28	51	15	3	31	34	697	30	76	2.61	−.7	.60	17	8.7	ne.	38	sw.	14	7	7	15	6.4	8.9	.0	0
SOUTH ATLANTIC																																		
Asheville	2,253	77	92	----	----	----	48.2	+1.1										83	3.72	−.1											7.3			
Charlotte [4]	779	63	86	994.2	1,023.4	+4.4	44.0	+5.5	72	28	52	20	3	36	37	610	----	----	3.45	+.2	1.11	16	9.2	se.	27	nw.	14	4	6	19	7.6	8.4	.0	0
Greensboro [2]	886	6	56	990.9	1,023.7	+4.4	44.7	+.8	78	28	53	18	10	36	28	593	34	77	5.51	+1.2	1.65	13	7.8	ne.	26	w.	14	6	3	20	7.5	7.1	.0	0
Hatteras	11	5	47	1,021.0	1,021.3	+3.0	41.4	+2.0	79	28	52	14	10	31	40	688	32	80	2.48	−1.4	.50	14	9.3	ne.	33	sw.	14	4	6	19	7.3	8.8	.0	0
Raleigh [4]	376	5	71	1,009.1	1,023.7	+3.7	48.0	+.6	71	20	54	32	2	42	26	492	43	88	5.33	+1.1	1.42	17	15.2	ne.	61	ne.	1	4	6	19	7.6	T	.0	0
Wilmington	72	73	107	1,021.3	1,022.7	+3.4	43.0	−.2	80	28	53	15	10	33	31	640	34	82	4.16	+.1	.92	16	7.8	ne.	34	w.	14	5	9	15	6.7	16.0	.0	0
Charleston [4]	48	11	92	1,020.7	1,022.4	+3.1	48.1	+.2	77	26	57	23	10	40	33	495	41	86	4.01	+.7	1.99	11	9.4	n.	37	sw.	14	6	9	14	6.7	.3	.0	0
Columbia, S. C. [4]	347	70	91	1,010.2	1,023.0	+3.7	50.8	−1.6	82	29	59	26	1	43	28	415	43	86	3.51	+.4	1.63	11	10.1	n.	30	w.	14	5	8	16	7.1	.0	.0	0
Greenville, S. C. [2]	1,040	18	36	984.4	1,022.4	+4.4	48.6	+.4	81	28	58	21	1	40	33	487	39	82	4.53	+.6	1.51	15	8.2	ne.	32	w.	14	5	8	16	6.8	T	.0	0
Augusta [4]	182	62	77	1,015.9	1,022.4	+3.4	45.8	+2.5	76	28	54	24	10	38	32	558	36	81	4.01	−1.4	1.23	17	9.8	ne.	31	w.	14	6	2	21	7.4	5.7	.0	0
Savannah [2]	65	19	51	1,020.3	1,022.7	+3.4	50.5	+.6	82	28	60	25	10	41	34	427	40	80	5.18	+1.0	1.50	15	5.9	nw.	25	w.	14	6	4	19	7.6	.0	.0	2
Jacksonville [4]	43	86	110	----	1,022.0	+2.4	54.0	+1.6	83	29	64	30	2	44	33	330	46	84	1.17	−2.1	.70	10	10.3	ne.	37	w.	14	3	9	17	7.6	.0	.0	0
							59.2	+1.2	82	29	68	34	1	50	31	203	----	----	1.33	−1.8	.81	8	8.6	ne.	26	nw.	14	3	11	15	7.2	.0	.0	1
FLORIDA PENINSULA																																		
Key West [4]	21	10	64	1,019.0	1,019.6	+1.0	70.5	+3.7										83	.57	−1.5											4.1			
Miami [4]	25	242	249	1,019.3	1,020.3	+1.0	74.2	+3.7	84	14	79	58	2	69	16	3	66	82	.07	−1.3	.07	1	9.4	e.	20	e.	25	18	9	2	3.4	.0	.0	0
Tampa [2]	35	5	36	1,020.0	1,021.3	+1.7	71.0	+3.0	81	17	75	48	2	67	20	17	62	83	.63	−1.5	.42	6	12.4	e.	32	ne.	24	14	10	5	4.3	.0	.0	0
							66.4	+4.5	83	29	77	38	2	56	29	50	58	84	1.00	−1.6	.91	5	7.6	ne.	24	s.	9	11	12	6	4.7	.0	.0	0
EAST GULF																																		
Atlanta [2]	1,173	33	72	979.7	1,022.0	+2.7	53.0	+1.8										84	4.40	−.6											7.9			
Macon [4]	370	79	87	1,008.8	1,022.0	+2.0	48.2	+2.9	77	27	57	24	2	39	30	491	40	81	6.20	+1.0	1.93	13	10.3	e.	35	w.	14	4	6	19	7.6	.5	.0	1
Apalachicola	35	11	51	1,020.3	1,021.7	+2.4	51.2	+1.9	82	28	61	28	1	42	34	407	42	77	4.40	−.2	1.48	15	6.9	ne.	23	nw.	14	3	5	21	8.0	T	.0	1
Pensacola [4]	56	54	79	1,019.3	1,021.7	+2.1	58.6	+2.3	77	6	65	33	1	52	23	207	54	90	1.21	−2.8	.54	6	8.4	e.	29	nw.	14	3	9	17	6.9	.0	.0	1
Anniston	618	6	32	1,003.1	1,022.7	+2.7	57.2	+2.0	78	28	64	30	1	50	22	244	52	86	.78	−3.7	.25	8	7.5	e.	23	nw.	14	1	7	21	8.0	.0	.0	0
Birmingham [2]	700	5	63	996.3	1,022.0	+2.0	48.9	+3.0	78	28	59	22	2	39	40	465	42	85	6.81	+1.2	2.29	10	----	ne.	----	----	----	2	6	21	----	.0	.0	1
Mobile [4]	57	86	161	1,019.3	1,021.3	+1.7	49.3	+2.8	79	28	59	23	2	40	38	459	42	82	7.90	+2.7	2.64	10	8.9	n.	40	sw.	13	2	8	19	8.0	.0	.0	2
Montgomery [4]	218	92	105	1,013.5	1,021.7	+1.7	55.8	+1.1	82	29	64	29	1	47	30	282	50	88	1.34	−4.2	.55	10	8.3	s.	25	s.	13	2	6	21	8.2	.0	.0	0
Meridian [4]	375	67	92	1,007.8	1,021.7	+2.1	54.4	+2.8	82	28	63	30	1	46	29	325	46	83	4.98	−.7	1.66	13	7.6	e.	24	sw.	13	1	8	20	8.2	.0	.0	1
Vicksburg [4]	247	82	102	1,011.9	1,021.0	+1.0	51.1	+1.5	80	28	60	25	1	42	36	412	44	84	5.48	−.2	1.47	11	6.7	n.	27	s.	13	2	7	20	8.2	.0	.0	2
New Orleans	53	76	84	1,019.0	1,021.0	+1.4	50.4	−1.4	78	28	58	25	9	42	27	436	42	84	7.83	+2.8	2.07	15	9.2	n.	27	se.	11	3	4	22	8.0	T	.0	3
							58.4	+1.1	83	28	67	33	1	50	33	235	52	85	1.51	−2.9	.39	14	7.2	e.	21	e.	23	1	7	21	8.2	.0	.0	1
WEST GULF																																		
Shreveport [2]	249	5	64	1,011.2	1,020.3	+.7	51.3	−1.4										85	3.43	+.8											8.1			
Fort Smith [2]	463	6	30	1,003.4	1,020.0	+1.0	48.4	−2.5	84	28	57	25	1	40	35	488	42	83	4.14	+.7	1.35	16	10.2	se.	32	sw.	27	3	4	22	8.2	1.0	.0	2
Little Rock [2]	357	26	58	1,008.5	1,021.7	+2.1	42.4	−.4	77	17	50	16	14	35	46	659	34	78	4.68	+2.0	.99	14	8.7	ne.	35	sw.	27	5	4	20	7.7	2.0	.0	3
Austin [2]	605	5	41	997.0	1,018.6	+.6	42.2	−2.7	75	18	50	21	2	35	33	658	35	78	7.14	+3.1	1.64	14	8.8	ne.	32	sw.	27	4	6	19	7.8	T	.0	3
Brownsville [2]	57	5	54	1,013.9	1,016.3	−.3	50.7	−2.7	83	28	60	23	9	41	39	431	44	83	2.71	+.3	.76	14	9.7	s.	34	nw.	27	3	3	23	8.3	T	.0	3
Corpus Christi [2]	20	6	33	1,016.9	1,017.6	−.4	64.4	+1.8	84	27	73	36	12	56	35	123	58	90	1.67	+.1	1.01	8	12.7	se.	34	s.	5	3	4	22	8.1	.0	.0	1
Dallas [2]	512	34	45	1,000.7	1,019.3	+.3	59.0	+2.1	78	18	68	30	12	50	36	212	54	90	1.71	----	.47	12	12.7	se.	34	n.	8	2	2	25	8.4	.0	.0	1
Fort Worth [2]	679	40	56	994.6	1,019.3	+.7	47.0	−3.0	85	19	55	21	9	39	37	534	40	82	2.46	+.1	.99	14	11.4	se.	43	w.	27	6	3	20	7.7	.4	.0	4
Galveston [4]	54	122	129	1,017.3	1,019.3	+.3	46.3	−1.0	83	19	55	19	9	38	37	549	40	84	4.12	+2.3	2.38	17	12.5	n.	46	sw.	27	6	3	20	7.7	.9	.0	4
Houston [4]	138	157	190	1,013.9	1,019.3	+.3	54.2	−2.1	74	28	60	31	13	48	31	314	50	93	2.06	−.9	.92	10	13.3	e.	38	e.	23	2	4	23	8.2	.0	.0	1
Palestine	510	64	72	1,001.4	1,019.6	+.3	55.0	−.9	82	28	62	31	9	48	24	305	50	90	2.92	−.3	.85	13	10.8	se.	33	se.	23	1	5	23	8.9	.0	.0	0
Port Arthur [4]	34	59	134	1,018.3	1,019.3	+.7	50.2	−1.0	82	28	58	25	9	42	28	439	43	79	3.74	+.6	1.22	14	8.5	s.	31	se.	26	2	4	23	8.2	T	.0	3
San Antonio [2]	693	8	51	992.9	1,018.3	+.3	54.0	−3.1	78	28	61	33	10	47	28	320	50	92	5.37	+1.7	2.71	14	13.2	s.	33	s.	27	2	5	22	8.3	.0	.0	0
							52.6	−2.8	84	28	63	23	12	42	44	372	46	80	1.86	+.1	.78	16	10.1	ne.	32	se.	26	3	5	21	8.1	.0	.0	1
OHIO VALLEY AND TENNESSEE																																		
Chattanooga [2]	762	6	66	994.2	1,022.4	+2.4	36.6	+1.7										79	4.64	+1.3											6.9			
Knoxville [2]	995	27	71	985.8	1,022.4	+2.8	46.6	+4.4	78	28	55	23	3	38	39	531	38	79	9.61	+4.6	3.93	17	8.0	n.	37	w.	14	1	10	18	8.0	.8	.0	2
Memphis [2]	399	5	49	1,007.1	1,021.7	+1.7	44.5	+3.7	75	19	53	20	3	36	37	594	36	81	6.38	+1.7	2.15	18	8.0	ne.	40	sw.	13	1	10	18	7.8	2.8	.0	0
Nashville [2]	546	5	72	1,002.4	1,022.4	+2.1	42.2	−.8	72	18	50	14	10	35	34	659	36	82	9.21	+4.7	3.63	13	7.9	n.	27	sw.	27	6	1	22	7.6	1.5	.0	5
Lexington [2]	989	4	58	985.4	1,022.7	+3.1	42.0	+.4	74	27	50	8	2	34	34	668	35	81	7.83	+3.6	4.04	13	9.3	n.	40	sw.	27	4	5	20	7.7	1.0	.0	3
Louisville	525	5	54	50.41,0	2201,	2.7	35.8	+.4	70	18	45	5	10	27	32	845	30	82	4.93	+1.2	1.95	10	----	sw.	----	----	----	5	8	16	6.8	9.1	.0	2
							137.2	+7.2	73	27	47	7	2	28	33	808	29	76	4.61	+1.0	1.93	12	8.0	s.	36	sw.	28	4	9	16	7.0	13.1	.0	1

See footnotes at end of table

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR FEBRUARY—Continued

District and station	Elevation of instruments: Barometer above sea level	Thermometer above ground	Anemometer above ground	Pressure: Station	Sea level	Departure from normal	Temperature of the air: Mean	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Wind: Average hourly velocity	Prevailing direction	Maximum velocity: Miles per hour	Direction	Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms
OHIO VALLEY AND TENNESSEE—Con.	Ft.	Ft.	Ft.	Mb.	Mb.	Mb.	°F.	°F.	°F.		°F.	°F.		°F.	°F.		°F.	%	In.	In.	In.		Mi.								0–10	In.	In.	
Evansville [2]	431	6	40	1,006.8	1,023.0	+3.4	35.0	+.1	71	27	45	3	6	25	35	869	30	84	3.27	−.1	.68	12	8.9	nw.	40	sw.	27	6	5	18	7.0	11.3	.0	0
Indianapolis [2]	823	5	54	991.9	1,023.0	+4.0	31.0	+.7	66	18	40	3	9	22	37	987	24	78	1.82	-----	.66	11	10.8	sw.	42	sw.	28	6	10	13	6.4	5.9	.0	1
Terre Haute [2]	575	4	36	1,001.7	1,023.4	+4.1	31.8	+.5	66	18	42	2	6	22	38	962	25	81	2.37	−.4	.90	12	10.0	s.	35	w.	28	8	7	14	6.2	5.9	.0	1
Cincinnati [4]	627	135	148	999.0	1,022.4	+4.1	36.7	+3.9	74	18	46	7	9	28	33	822	28	81	4.05	+1.0	1.66	11	4.9	ne.	19	nw.	19	8	6	15	6.2	11.4	.0	1
Columbus [4]	822	90	110	992.2	1,023.0	+4.0	32.6	+1.9	66	19	41	3	9	24	36	939	24	80	2.75	.0	1.37	11	9.5	s.	44	sw.	28	8	6	15	6.2	6.7	.0	0
Dayton [2]	1,003	6	55	985.4	1,023.0	+4.4	30.0	+.1	64	18	39	−2	10	21	34	1,016	24	80	3.37	+.6	2.06	12	11.7	ne.	47	w.	28	7	8	14	6.4	8.1	.0	0
Elkins [2]	1,947	5	45	951.6	1,023.0	+3.4	34.5	+3.5	69	19	47	−2	10	22	41	884	26	80	4.06	+.9	1.29	16	7.9	w.	41	w.	14	5	7	17	7.0	16.6	.0	0
Parkersburg	637	77	84	999.7	1,023.7	+4.1	36.6	+2.4	74	19	47	3	9	26	30	819	27	73	3.45	+.2	1.05	13	6.7	n.	28	nw.	19	6	7	16	6.9	14.8	.0	1
Pittsburgh [2]	842	39	54	991.9	1,023.4	+5.1	32.8	+3.0	68	19	42	1	9	24	31	935	22	70	1.90	−.8	.64	13	10.8	nw.	36	sw.	14	6	11	12	6.3	9.5	T	1
LOWER LAKES							24.4	+.2										80	2.45	−.1											6.8			
Buffalo [2]	768	34	96	993.6	1,023.0	+6.1	25.2	+1.5	62	19	34	−5	1	16	36	1,153	18	80	2.94	−.1	1.37	16	13.9	w.	40	w.	19	4	12	13	6.9	7.0	T	0
Canton	448	10	61	1,005.1	1,022.4	+5.8	15.0	−.8	54	19	28	−30	1	2	41	1,444	10	83	2.50	+.1	1.00	16	8.6	w.	29	w.	19	9	6	14	6.1	13.3	6.2	0
Oswego	335	71	85	1,008.5	1,021.7	+5.4	22.6	−.1	54	19	31	−13	1	14	28	1,231	14	68	2.16	−.6	.82	20	10.9	se.	34	nw.	14	6	5	18	7.1	11.8	2.7	1
Rochester [2]	523	4	69	1,003.4	1,023.4	+6.1	23.1	+.2	59	19	33	−10	1	13	36	1,213	18	84	2.50	−.3	.88	17	10.7	w.	36	w.	14	5	10	14	7.0	14.5	2.7	0
Syracuse [2]	596	5	57	1,000.7	1,023.7	+6.4	21.3	−1.6	56	19	33	−20	1	9	42	1,265	14	76	2.19	−.6	.70	16	10.4	sw.	37	s.	14	7	6	16	6.8	13.4	3.2	0
Erie [4]	714	57	81	995.9	1,023.4	+5.8	28.3	+1.4	65	19	36	3	9	21	33	1,064	19	82	2.67	.0	.85	10	9.0	w.	28	se.	28	5	9	15	6.8	7.7	T	0
Cleveland [2]	762	27	54	994.2	1,023.4	+5.4	28.6	+2.3	63	19	38	−8	9	19	36	1,056	21	80	2.19	−.4	1.33	10	11.0	s.	41	w.	28	5	9	15	6.9	4.0	.1	0
Sandusky	629	5	67	999.3	1,023.7	+5.4	28.0	+.6	61	19	36	0	9	21	35	1,071	-----	-----	2.36	+.2	1.30	9	9.8	e.	32	w.	28	10	7	12	5.7	3.5	T	0
Toledo [2]	628	5	47	999.0	1,023.4	+4.8	25.6	−.4	59	19	34	−9	9	17	35	1,141	20	80	2.41	+.3	1.16	10	11.5	sw.	40	sw.	28	6	8	15	6.8	4.2	T	0
Fort Wayne [2]	857	5	34	990.5	1,023.0	+4.4	26.6	.0	59	18	36	0	9	18	38	1,115	21	82	2.67	+.2	1.35	8	8.7	s.	34	sw.	28	5	11	13	6.8	3.7	.0	0
Detroit [2]	730	5	77	995.6	1,023.7	+5.7	24.4	−.4	55	19	32	−1	10	17	37	1,178	18	80	2.36	+.1	1.18	9	10.0	n.	42	nw.	19	1	11	17	7.7	4.6	T	0
UPPER LAKES							19.1	+.8										79	1.48	−.3											6.5			
Alpena	609	5	89	999.0	1,022.7	+5.4	18.2	+.2	48	19	27	−12	10	9	41	1,356	14	80	1.65	−.1	1.08	9	11.1	nw.	38	e.	28	2	14	13	7.0	16.8	9.6	0
Escanaba	612	51	72	998.3	1,022.0	+4.0	16.0	+.6	43	16	25	−13	10	7	35	1,418	10	75	.90	−.6	.78	5	9.8	s.	35	nw.	19	13	8	8	4.9	9.5	12.2	0
Grand Rapids [4]	707	70	244	995.6	1,022.7	+4.7	25.0	+1.3	51	24	32	−1	10	18	37	1,157	17	84	1.87	−.4	1.23	12	10.3	sw.	38	sw.	28	2	9	18	7.5	10.5	T	1
Lansing [4]	878	5	90	989.5	1,023.0	+5.4	23.0	+.1	50	24	31	−4	10	15	36	1,220	16	78	2.03	+.1	1.16	9	8.1	sw.	32	nw.	19	2	14	13	7.1	6.4	T	0
Marquette	734	44	73	993.2	1,021.7	+4.1	17.8	+1.5	51	16	26	−8	10	10	35	1,365	11	78	1.06	−.9	.86	10	8.8	w.	28	w.	19	8	9	12	6.1	10.4	19.4	0
Sault Sainte Marie [3]	614	10	52	998.0	1,022.0	+4.4	13.7	+2.3	39	16	23	−15	10	4	33	1,484	8	88	1.27	−.2	.33	17	11.1	w.	47	nw.	19	3	7	19	7.5	18.6	16.0	0
Chicago [2]	673	5	38	997.3	1,022.7	+4.1	26.3	+1.4	55	18	34	−2	9	18	38	1,123	20	78	1.62	−.5	1.02	10	9.8	n.	42	nw.	19	4	8	17	7.1	5.6	T	0
Green Bay	617	5	32	999.7	1,023.7	+5.7	16.8	−.6	46	17	26	−15	10	7	36	1,398	10	72	1.93	+.3	.80	11	8.1	s.	42	sw.	19	7	8	14	6.1	13.2	7.6	0
Milwaukee [2]	681	33	66	998.6	1,022.4	+4.4	23.2	+2.0	51	26	31	−4	8	16	40	1,209	16	74	1.68	−.2	1.32	11	12.2	nw.	44	w.	28	5	8	16	7.0	6.1	T	0
Duluth [4]	1,133	5	47	978.3	1,022.4	+4.1	10.8	−.6	41	16	21	−25	8	1	36	1,572	4	87	.81	−.3	.51	7	13.0	w.	49	w.	19	14	7	8	4.6	8.1	7.9	0
NORTH DAKOTA							6.2	−1.2										87	1.12	+.6											5.9			
Fargo [2]	940	5	47	986.5	1,023.4	+3.1	5.6	−2.5	33	18	16	−27	8	−5	36	1,719	2	85	1.60	+.9	.82	12	12.8	s.	46	nw.	19	12	7	10	5.3	15.8	23.0	0
Bismarck [2]	1,677	5	41	958.3	1,022.7	+2.7	7.0	−1.5	44	17	18	−28	3	−4	40	1,684	4	88	.85	+.4	.36	10	11.1	e.	52	nw.	19	9	8	12	6.1	12.7	16.3	0
Devils Lake	1,478	11	44	965.5	1,023.0	+3.4	4.0	−1.1	35	16	14	−25	8	−6	36	1,772	1	90	.83	+.3	.25	10	9.9	w.	34	nw.	19	12	9	8	5.2	12.6	19.8	0
Grand Forks [2]	1,832	4	41	991.5	1,024.7	+3.4	2.3	-----	33	16	13	−30	8	−9	35	1,816	0	86	1.03	-----	.43	11	----	nw.	----	----	----	10	6	13	----	13.1	20.2	0
Williston	1,878	42	50	950.2	1,021.3	+1.7	8.4	+.3	43	15	19	−20	3	−2	50	1,643	6	86	1.18	+.8	.42	10	7.1	e.	29	nw.	18	7	6	16	6.9	13.7	13.3	0
UPPER MISSISSIPPI							25.1	+.8										78	1.98	+.2											6.4			
Minneapolis-St. Paul [2]	919	43	74	987.1	1,022.7	+4.1	15.6	−.3	48	17	25	−20	8	6	40	1,430	9	77	1.37	+.4	.91	8	10.0	se.	40	nw.	19	10	10	9	5.4	11.6	8.7	0
La Crosse [2]	714	5	29	994.9	1,022.7	+3.7	17.5	+.5	52	17	28	−20	9	7	40	1,375	12	82	1.61	+.5	1.15	9	8.3	nw.	43	nw.	15	8	7	14	6.2	8.0	3.0	0
Madison [2]	974	27	39	985.8	1,023.0	+4.0	19.5	+.4	51	26	30	−17	9	9	37	1,321	12	77	2.13	+.6	1.65	7	9.4	nw.	45	nw.	19	6	8	15	6.6	5.8	.2	0
Charles City	1,015	10	51	984.8	1,023.7	+4.1	19.7	+2.6	52	26	30	−18	8	10	37	1,312	-----	-----	2.62	+1.5	2.12	9	6.4	nw.	24	nw.	19	10	8	11	5.3	6.1	T	0
Moline [2]	606	6	50	1,000.0	1,023.7	+4.1	24.4	+.9	56	18	34	−6	9	15	41	1,177	18	78	2.35	+.7	1.90	8	9.5	e.	37	sw.	28	6	7	16	6.8	3.0	.0	1
Dubuque	699	60	79	996.3	1,023.4	+4.1	23.2	+1.0	54	26	32	−4	8	14	39	1,215	16	74	2.02	+.6	1.53	7	5.5	nw.	26	nw.	19	6	9	14	6.6	3.3	T	0
Burlington [2]	702	4	36	996.3	1,023.0	+3.4	26.0	−.4	60	17	35	−4	8	17	35	1,144	20	82	1.67	−.1	1.41	8	10.7	nw.	40	nw.	19	7	3	19	7.0	2.2	.0	1
Cairo	357	5	99	1,009.5	1,023.0	+3.4	38.7	+.2	70	18	46	12	1	31	34	762	-----	-----	3.25	.0	.80	12	9.9	ne.	36	sw.	27	6	4	19	7.3	4.4	.0	0
Peoria [2]	609	7	26	1,000.0	1,023.4	+3.8	27.6	+2.7	59	18	37	−1	8	19	37	1,087	20	79	1.70	−.4	1.10	7	9.9	ne.	38	sw.	28	7	6	16	6.6	4.0	.0	1
Springfield, Ill. [4]	636	5	191	999.0	1,022.7	+3.7	29.0	+1.4	62	18	38	−4	9	20	35	1,047	22	79	1.53	−.9	.63	7	11.8	n.	48	s.	27	10	3	16	6.2	6.6	.0	0
St. Louis [4]	568	33	59	1,002.4	1,023.7	+4.1	34.8	.0	69	17	43	6	8	27	35	785	-----	-----	1.54	−1.1	.54	9	11.4	s.	37	s.	27	9	6	14	----	5.3	.0	0
MISSOURI VALLEY							26.6	+.2										81	1.36	+.1											6.9			
Columbia, Mo. [4]	784	6	66	992.9	1,022.0	+2.7	32.6	+.2	70	18	41	3	8	24	38	940	24	82	2.04	.0	1.10	9	7.9	n.	27	w.	27	9	5	15	6.1	4.3	.0	1
Kansas City [2]	963	38	76	985.8	1,022.0	+2.7	31.0	−.2	70	18	40	0	8	22	36	986	24	74	.94	−.6	.33	7	10.6	sw.	37	sw.	27	6	4	19	7.4	4.4	.0	1
St. Joseph [2]	967	5	51	985.8	1,022.4	+3.1	28.0	−1.6	67	17	38	−3	8	18	37	1,074	22	78	1.01	−.7	.41	7	8.5	n.	32	sw.	27	5	4	20	7.4	4.2	.0	0
Springfield, Mo. [2]	1,324	5	50	972.2	1,021.3	+2.3	34.4	+.4	74	18	43	6	9	26	33	893	28	82	1.87	−.6	.49	11	12.7	se.	46	sw.	27	7	4	18	6.9	6.4	.0	0
Topeka [4]	987	65	87	985.1	1,022.0	+3.0	30.2	−.8	71	17	38	0	8	22	32	1,008	24	84	1.42	−.1	.66	10	9.0	n.	31	sw.	27	6	3	20	7.4	4.6	.0	2
Lincoln [4]	1,189	6	81	977.3	1,022.0	+2.4	25.6	−.5	63	18	34	−6	8	17	36	1,145	20	84	2.46	+1.5	1.37	12	9.3	n.	39	nw.	28	4	6	19	7.4	14.4	T	0
Omaha [2]	1,105	5	68	980.7	1,022.7	+2.7	25.2	+.9	62	17	35	−10	12	16	40	1,154	18	78	1.92	+1.0	1.02	10	11.8	n.	43	n.	19	3	10	16	6.9	13.7	.0	0
Valentine	2,598	46	54	924.8	1,020.7	+.7	23.2	+1.8	67	18	35	−14	12	12	43	1,214	16	78	.26	−.3	.13	4	9.3	w.	32	nw.	27	8	10	11	6.1	7.6	2.8	0
Sioux City [2]	1,138	5	40	-----	1,022.4	+2.4	22.6	+2.2	59	17	33	−14	12	12	40	1,230	-----	-----	.97	+.2	.76	5	10.9	nw.	44	nw.	19	4	14	11	6.6	3.0	T	0
Huron [2]	1,301	5	41	972.6	1,022.7	+2.0	13.4	−.9	46	17	24	−23	8	3	39	1,496	10	91	.68	+.1	.42	9	11.6	se.	47	nw.	19	7	8	14	6.6	10.7	6.2	0
NORTHERN SLOPE							21.9	−.4										74	.64	0											6.9			
Billings [2]	3,570	16	39	890.3	1,018.6	−2.1	22.9	−1.3	63	17	33	−8	11	15	50	1,223	16	72	.35	-----	.20	9	12.4	sw.	41	nw.	18	3	9	17	7.1	2.3	T	0
Havre	2,507	11	67	927.2	1,020.7	−.7	16.0	+2.4	51	18	28	−19	10	4	57	1,421	10	73	.47	.0	.18	10	9.7	sw.	34	sw.	18	3	12	14	7.1	5.4	.5	0
Helena [2]	4,124	5	43	872.3	1,020.7	+1.1	20.5	−1.1	58	17	31	−22	11	10	47	1,290	13	70	.22	−.2	.06	8	9.4	w.	49	sw.	17	3	9	17	7.1	4.0	.0	0
Missoula [2]	3,263	4	32	901.8	1,019.3	+.3	26.8	+3.0	56	17	34	−3	6	19	23	1,110	20	77	.97	+.2	.32	8	7.2	se.	34	w.	18	4	2	23	7.6	4.0	.0	0
Kalispell	2,973	48	56	911.3	1,018.3	−1.0	24.2	+.9	55	17	32	−6	6	16	27	1,185	17	72	1.27	+.1	.51	14	6.1	w.	28	w.	18	4	4	21	7.6	6.7	T	0
Miles City [2]	2,371	5	28	932.6	1,020.7	.0	17.0	-----	63	18	30	−19	11	4	60	1,365	11	78	.74	-----	.37	6	----	nw.	----	----	----	4	5	20	7.2	3.9	.3	0
Rapid City [2]	3,259	5	56	900.8	1,019.6	−.7	21.2	−.6	67	17	33	−10	11	9	41	1,271	14	78	.53	.0	.25	7	13.6	nw.	56	nw.	23	4	9	16	7.0	5.7	.2	0
Cheyenne [2]	6,094	22	40	809.3	1,018.6	+.6	23.9	−3.4	60	26	35	−10	11	12	39	1,190	15	72	.74	+.1	.24	9	13.4	nw.	47	nw.	16	4	10	15	6.6	7.3	1.3	0
Lander [2]	5,352	6	30	832.4	1,019.3	−.3	20.0	−2.5	54	17	31	−18	12	9	43	1,305	11	69	.75	+.1	.49	7	5.5	se.	47	w.	16	9	11	9	5.4	7.8	.3	0
Sheridan [2]	3,790	5	38	883.2	1,019.6	.0	20.3	−2.3	61	18	32	−16	11	9	47	1,296	13	76	.68	.0	.21	11	7.6	nw.	39	nw.	23	5	10	14	6.8	9.8	T	0
North Platte [4]	2,821	11	51	916.7	1,019.0	−.6	28.0	+1.4	71	18	40	−5	11	16	47	1,072	18	72	.37	−.2	.11	10	7.8	n.	24	nw.	27	9	6	14	6.3	5.2	.9	0
MIDDLE SLOPE							31.8	−2.7										78	1.61	+.7											6.8			
Denver [4]	5,292	106	113	835.1	1,017.6	+.3	30.1	−2.6	65	17	41	−5	11	19	42	1,012	17	70	.45	−.1	.33	7	6.8	s.	26	ne.	23	6	10	13	6.4	7.4	T	0
Pueblo [1]	4,690	5	36	854.7	1,018.6	+2.0	26.8	−5.3	64	18	40	−18	12	14	62	1,105	19	76	.58	+.1	.20	12	7.4	nw.	39	w.	27	10	8	11	5.6	9.1	.0	0
Concordia	1,392	50	58	969.9	1,021.7	+1.7	28.1	−1.7	65	17	36	0	8	20	30	1,070	22	79	2.63	+1.7	2.07	11	9.1	ne.	30	nw.	27	8	4	17	6.7	7.2	.0	1
Dodge City [1]	2,509	5	58	928.5	1,019.3	.0	29.5	−3.7	69	18	39	−8	13	20	37	1,031	24	84	1.72	+.9	1.18	9	15.2	ne.	45	nw.	27	4	9	16	7.1	4.4	.0	3
Wichita [1]	1,358	6	64	970.2	1,020.7	+1.7	32.0	−2.4	69	17	40	3	8	24	29	955	25	78	1.19	−.1	.26	14	14.2	n.	44	ne.	19	6	6	17	7.3	6.1	.0	2
Oklahoma City [4]	1,214	10	47	975.3	1,019.6	+.6	38.3	−1.5	72	17	46	13	12	30	32	773	32	84	3.11	+2.0	.73	12	10.1	n.	28	s.	27	8	2	19	7.1	3.1	.0	3
Tulsa [1]	674	10	60	995.3	1,020.3	-----	37.6	−1.5	75	17	46	14	9	29	42	795	30	77	1.59	+.1	.59	10	11.4	n.	47	n.	19	4	7	18	7.6	2.5	.0	0

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR FEBRUARY 1948—Continued

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Mean	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms
SOUTHERN SLOPE	*Ft.*	*Ft.*	*Ft.*	*Mb.*	*Mb.*	*Mb.*	°F.	°F.	°F		°F.	°F.		°F.	°F.		°F.	%	*In.*	*In.*	*In.*		*Mi.*							*0–10*	*In.*	*In.*	
							43.6	−1.6										73	1.23	+.5										6.9			
Abilene [2]	1,738	4	59	955.6	1,018.0	+.3	44.6	−1.4	81	18	56	14	11	34	44	583	36	77	1.13	+.1	.52	11	16.5	s.	46	se.	23	6	4	19	7.3	2.0	.0	3
Amarillo [2]	3,676	5	42	888.6	1,017.4	+.1	34.0	−2.1	75	18	46	0	13	22	38	895	28	80	1.83	+1.1	.65	9	14.5	s.	40	n.	11	6	6	17	7.0	8.6	.0	1
Del Rio	960	63	71	982.4	1,016.6	−.7	54.4	−1.6	83	28	64	24	12	44	38	327	44	72	.74	+.2	.21	13	9.8	se.	38	nw.	26	3	8	18	7.5	.0	.0	1
Roswell	3,614	6	29	890.6	1,015.6	−1.0	41.3	−1.4	75	22	56	10	11	27	52	686	26	64	1.22	+.6	.99	8	9.2	n.	51	w.	27	9	7	13	5.9	1.6	.0	0
SOUTHERN PLATEAU																																	
							46.2	−1.4										54	1.25	+.4										5.4			
El Paso [2]	3,778	35	85	885.2	1,013.5	−2.4	48.8	+.2	76	18	62	17	12	36	39	471	28	49	.63	+.2	.47	7	10.8	n.	47	sw.	27	12	5	12	5.4	.6	.0	0
Albuquerque [2]	4,972	5	45	835.8	1,014.6	−1.0	37.6	−2.9	66	22	49	−1	12	26	35	791	24	64	1.42	+1.1	.47	9	9.2	sw.	43	s.	23	9	9	11	5.3	6.1	.0	1
Flagstaff	6,907	34	48	787.3	1,017.3	+1.4	29.2	−1.6	60	21	42	−14	12	16	45	1,038	20	70	2.33	+.2	.59	11	----	w.	----	------	--	6	8	15	6.7	28.5	4.8	0
Phoenix [4]	1,107	39	87	976.0	1,015.9	−.4	53.8	−1.3	83	19	66	27	13	41	39	322	31	50	1.09	+.3	.64	6	6.4	e.	24	sw.	23	9	8	12	5.5	.0	.0	0
Tucson [2]	2,555	5	39	925.8	1,014.9	.0	50.8	−1.4	83	22	64	20	12	37	42	408	29	51	2.00	+1.0	.70	9	6.7	se.	26	sw.	23	10	8	11	5.5	.0	.0	0
Yuma	142	9	54	1,010.5	1,015.6	−1.0	57.1	−1.5	87	21	70	27	13	44	42	242	30	40	.02	−.4	.02	1	6.3	n.	26	nw.	10	11	16	2	4.2	.0	.0	0
MIDDLE PLATEAU																																	
							31.2	−1.9										64	.84	−.1										6.3			
Reno [2]	4,527	20	52	862.5	1,018.6	.0	32.5	−3.2	68	16	49	−2	7	16	50	943	20	59	.30	−.9	.12	4	8.1	s.	36	s.	4	7	9	13	6.2	3.4	T	0
Winnemucca	4,339	5	56	867.6	1,018.3	+1.3	32.1	−1.4	63	17	45	−3	12	19	40	956	20	58	.51	−.4	.25	7	8.7	sw.	30	sw.	9	7	10	12	6.0	4.8	.0	0
Modena	5,473	10	46	831.7	1,016.9	−.7	27.8	−3.2	57	18	40	−13	12	15	44	1,076	----	----	.95	.0	.43	7	9.9	sw.	34	sw.	2	9	6	14	6.0	11.4	.4	0
Salt Lake City [2]	4,357	32	58	866.2	1,017.3	−2.3	33.2	+1.1	58	16	43	3	12	24	31	920	23	65	.86	−.4	.38	6	9.7	se.	38	nw.	22	4	11	14	6.6	7.7	.0	1
Grand Junction [2]	4,602	5	26	858.8	1,019.0	+1.7	30.2	−2.7	54	19	41	−4	13	20	33	1,011	22	72	1.56	+1.0	.52	10	6.7	e.	28	sw.	27	5	10	14	6.6	18.4	T	1
NORTHERN PLATEAU																																	
							31.3	−.7										73	1.47	+.1										7.1			
Baker [4]	3,471	36	54	895.4	1,019.3	−1.0	29.0	.0	54	17	38	−2	12	20	31	1,046	21	73	1.28	.0	.48	12	6.3	se.	30	sw.	18	2	8	19	7.5	10.8	.0	0
Boise [2]	2,739	5	49	921.4	1,020.0	−1.0	32.0	−1.6	56	17	41	3	12	23	29	955	26	75	1.58	+.1	.72	11	11.1	se.	33	w.	22	5	6	18	6.9	12.0	.0	1
Pocatello [2]	4,478	5	31	862.2	1,019.0	−1.3	29.4	+2.5	59	17	39	−1	12	20	30	1,032	20	67	.73	−.5	.43	12	10.7	sw.	34	sw.	22	4	10	15	6.8	5.1	.0	0
Spokane [2]	1,929	6	51	947.5	1,018.3	−1.0	29.0	−2.3	54	17	36	0	12	22	28	1,048	22	76	2.75	+.9	.85	13	9.0	sw.	38	sw.	26	5	5	19	7.4	12.0	.0	0
Walla Walla	991	57	65	982.7	1,019.6	.0	37.2	+.1	68	17	45	12	7	30	27	808	----	----	1.62	−.2	.94	13	7.2	s.	34	w.	26	3	10	16	7.1	1.0	.0	0
Yakima [2]	1,076	4	54	978.7	1,018.6	−.4	31.2	−2.8	64	17	41	1	6	21	36	983	24	72	.86	.0	.35	9	----	w.	--	------	--	6	4	19	6.9	6.9	.0	0
NORTH PACIFIC COAST																																	
							41.2	−.9										78	6.73	+1.3										7.5			
North Head	211	5	55	1,010.2	1,018.0	+.7	41.4	−1.6	50	17	46	27	6	37	18	652	36	80	9.22	+1.6	2.26	20	17.8	nw.	69	s.	7	4	7	18	7.3	T	.0	0
Seattle [4]	125	90	321	1,013.2	1,018.0	+.4	41.9	−.9	58	17	47	28	11	37	16	673	34	76	6.04	+2.2	1.25	17	13.2	s.	47	sw.	14	4	5	20	7.5	.3	.0	0
Tacoma	194	172	201	1,010.5	1,017.6	−.4	40.6	.0	59	17	46	24	6	36	16	709	----	----	5.80	+1.0	1.27	17	11.7	s.	43	sw.	17	4	8	17	7.0	2.0	.0	0
Tatoosh Island	86	5	61	1,013.2	1,016.6	+.7	40.8	−.2	49	28	45	33	6	37	12	697	35	80	12.85	+3.1	2.49	17	19.0	e.	60	s.	17	7	3	19	7.2	T	.0	0
Medford [2]	1,329	29	58	972.6	1,021.7	+3.1	39.0	−3.3	66	25	49	18	3	29	38	756	31	74	2.05	.0	.69	13	----	n.	--	------	--	3	5	21	7.6	4.3	.0	0
Portland, Oreg. [4]	154	68	106	1,014.2	1,020.0	+1.7	42.4	+.3	65	17	48	27	3	37	18	655	34	77	6.42	+.9	1.09	19	6.7	s.	20	ne.	5	3	5	21	8.0	T	.0	0
Roseburg	510	45	76	1,002.4	1,021.3	+2.3	42.5	−.9	68	25	51	24	3	34	32	654	36	80	4.76	+.1	1.78	21	4.8	sw.	25	sw.	15	3	4	22	7.9	T	.0	0
MIDDLE PACIFIC COAST																																	
							47.9	−1.8										69	2.30	−2.1										5.8			
Eureka	60	72	88	1,020.3	1,022.7	+3.4	45.4	−1.8	62	16	52	31	3	39	23	571	39	78	5.20	−1.5	2.06	14	7.5	se.	31	n.	22	5	12	12	6.3	.0	.0	0
Red Bluff [2]	353	5	26	1,007.5	1,020.3	----	47.2	−2.2	70	24	57	27	3	37	31	518	32	59	.82	−3.2	.42	7	7.5	nw.	34	nw.	22	9	7	13	5.8	.5	.0	1
Sacramento [4]	66	92	115	1,017.6	1,020.3	+1.7	48.2	−1.9	69	26	58	28	3	38	30	483	35	66	.88	−2.2	.33	7	7.4	se.	31	nw.	23	10	5	14	5.4	.0	.0	0
San Francisco [4]	155	112	132	1,015.2	1,021.0	+2.4	50.8	−1.4	70	17	57	39	7	45	18	414	40	74	2.32	−1.6	.60	9	7.7	w.	26	w.	26	10	5	14	5.6	.0	.0	0
SOUTH PACIFIC COAST																																	
							52.6	−1.0										59	1.04	−1.2										5.3			
Fresno [2]	327	5	34	1,007.5	1,020.0	+.7	49.0	−1.3	74	25	62	28	11	36	39	463	34	58	.77	−.7	.33	6	5.1	nw.	33	nw.	10	8	8	13	6.0	.0	.0	0
Los Angeles	338	236	263	1,005.8	1,018.0	.0	54.6	−.9	82	17	64	37	3	45	26	308	36	56	1.29	−1.9	1.10	4	7.5	w.	35	nw.	23	10	9	10	5.1	.0	.0	1
San Diego [2]	87	20	55	1,015.2	1,018.3	+.3	54.2	−.9	78	16	63	37	13	45	32	315	42	64	1.07	−1.0	.80	6	6.8	nw.	26	sw.	5	10	11	8	4.9	.0	.0	0
WEST INDIES																																	
San Juan, P. R.	82	9	54	1,014.6	1,017.3	-----	75.1	+.2	81	1	79	67	28	71	13	0	----	---	1.72	−1.0	.29	17	13.0	e.	34	ne.	25	5	21	3	5.4	.0	.0	1
PANAMA CANAL																																	
Balboa Heights [6]	118	6	97	-------	1,010.5	-----	81.0	+.7	92	25	90	67	22	72	23	0	70	77	.02	−.6	----	1	9.3	n.	25	n.	6	13	14	2	4.0	.0	.0	0
Cristobal [6]	23	37	92	-------	1,011.8	-----	80.8	+.3	85	4	83	73	22	78	10	0	71	76	.14	−1.4	----	6	15.1	ne.	28	ne.	15	8	16	5	5.7	.0	.0	0
ALASKA																																	
Anchorage [2]	132	6	44	1,012.5	1,017.6	-----	12.2	−4.4	47	1	23	−15	17	1	33	1,531	6	67	.43	−.3	.17	8	6.1	n.	34	s.	1	16	4	9	4.3	8.1	8.4	0
Fairbanks [2]	454	5	63	1,005.8	1,024.4	-----	−6.6	−5.4	30	2	7	−39	18	−20	42	2,073	−6	84	.50	.0	.21	5	4.2	nw.	31	sw.	2	14	7	8	4.5	6.8	16.9	0
Juneau [2]	80	6	30	1,016.6	1,017.3	-----	21.8	−7.8	39	25	28	−8	16	15	25	1,254	12	66	1.14	−.9	.46	10	8.0	e.	34	se.	11	6	2	21	7.3	10.6	2.0	0
Nome	22	10	75	1,023.0	1,023.7	-----	.6	−5.0	32	4	11	−24	24	−10	30	1,867	1	92	.56	−.2	.42	7	7.9	n.	50	s.	1	19	2	8	3.6	5.6	33.8	0
Annette Is.	113	5	53	1,010.5	1,014.9	-----	30.5	−6.4	43	24	35	8	17	26	19	1,002	25	76	6.63	−.4	1.51	14	----	nw.	--	------	--	7	6	16	6.8	29.8	4.0	0
Barrow	29	5	27	1,025.4	1,025.7	-----	−11.2	+5.2	25	1	−4	−43	29	−18	31	2,209	−12	94	.18	.0	.06	7	11.0	e.	41	------	1	9	9	11	5.7	2.9	22.3	0
Cordova [2]	45	5	32	1,011.9	1,013.9	-----	22.6	−5.1	42	24	33	0	20	12	32	1,230	18	80	2.83	−2.4	1.47	10	----	e.	32	ne.	14	11	4	14	5.5	9.9	5.9	0
Galena	139	4	66	1,018.0	1,023.0	-----	−6.8	−5.5	35	4	0	−43	15	−18	43	2,072	----	76	0.41	------	.16	7	----	n.	33	sw.	2	15	6	8	3.9	4.1	27.4	0
Gambell	32	5	32	1,023.0	1,024.0	-----	6.8	+4.1	32	8	13	−10	24	1	22	1,688	6	94	.50	+.4	----	6	1.6	ne.	44	w.	1	9	8	12	5.0	5.0	19.3	----
Kotzebue [2]	20	5	31	1,024.7	1,025.4	-----	−6.4	−2.6	30	1	1	−34	26	−14	28	2,075	−10	76	.17	−.1	.10	5	10.1	se.	54	se.	1	14	5	10	4.4	1.7	18.3	0
McGrath [2]	341	5	31	1,009.1	1,023.0	-----	−5.2	−10.1	33	1	9	−46	18	−20	41	2,036	−6	69	.42	−1.0	.36	5	----	nw.	21	s.	1	17	2	10	3.9	5.2	29.1	0
Northway [2]	1,718	5	32	957.7	1,025.4	-----	−12.0	−7.5	24	2	0	−49	15	−24	35	2,235	−10	80	.81	+.4	.29	11	2.8	se.	38	nw.	2	10	5	14	6.1	8.1	29.2	0
HAWAII																																	
Honolulu [4]	38	86	98	1,014.6	1,015.9	-----	70.7	−.1	82	23	76	60	8	66	14	0	61	72	2.48	−1.4	1.41	14	8.0	ne.	35	ne.	20	7	15	7	5.3	.0	.3	2

[1] Height of barometer cistern above mean sea level on January 1, 1900, or when station was first established since January 1, 1900. When station is moved to new location or airport, the pressure is reduced to the original elevation for homogeneity. These elevations do not represent the present station elevation in most cases.

[2] Data are from airport records. Pressures adjusted to original elevations according to note [1].

[3] Barometric, hygrometric, wind, character of day, and average cloudiness data from airport records; remainder from city office records.

[4] Barometric and hygrometric data from airport records; remainder from city office records.

[5] Barometric, temperature, degree day, and hygrometric data from airport; remainder from city office records.

[6] Bihourly hygrometric data.

NOTE.—Unless otherwise indicated, data in table are city office records.

SEVERE LOCAL STORMS FOR FEBRUARY 1948

[The table hereunder contains such data as have been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Columbia River Gorge, near The Dalles, Oreg.	5-6	10 p. m., 5th—4 p. m., 6th.	[1] 1-2	.....	$9,000	High wind and snow.	High winds up to 60 m. p. h., swept through Columbia Gorge, swamping 2 boats and driving a tug and empty oil barge on rocks. Power poles blown over; stacked lumber at The Dalles and near Umatilla scattered. 16 inches of snow fell in The Dalles in 20 hours. $4,000 loss to Government and private contractor. $5,000 loss to navigation company.
Aberdeen, Miss.	8-9	Night, 8th—day, 9th.	.....	.....	25,000	Glare and sleet.	Freezing rain, accompanied by occasional snow and sleet. Streets, trees, wires, and buildings coated with ice. Power and communications disrupted; trees felled.
South Carolina, northern and central portions.	9-10	Afternoon, 9th—morning, 10th.	.....	.....	.....	Snow, sleet, and glaze.	Comparatively severe, causing State-wide traffic interruption and minor motor accidents.
Kansas, southwestern portion.	10-11	Night, 10th,—morning of 11th.	.....	3	.....	Blizzard.	Near zero temperatures; 3 to 7 inches of snow; and high winds, especially in Meade, Ford, and Clark Counties, where roads were blocked 1 or 2 days. 3 persons met death from exposure in northern Meade County.
Toltec Gorge, Colo.	11	P. m.	.....	.....	5,000	Snow slide.	14 persons injured as 3 passenger cars of the Rio Grande Western R. R. were caught in snowslide and carried 300 feet down gorge.
Elk Springs, Colo.	11	.....	.....	.....	.....	Blizzard.	U. S. Highway 40 blocked for a day by drifts 12 to 14 feet deep.
Monticello, Miss.	13	11 a. m.	.....	0	15,000	Tornado.	A probable tornado destroyed 2 homes and many trees about 12 miles south of Monticello. No injuries.
Newton, Miss.	13	12:30 p. m.	100	5	100,000	do.	Tornado passed east of town, destroying about 30 homes and a hangar, and cutting a freight train into 2 parts. It moved northeastward in zigzag course and over a course almost identical with that of a previous tornado. 25 persons injured.
West Virginia.	13-15	.....	.....	7	.....	Flood.	Streams overflowed banks locally. Maximum flood stage of record at Clarksburg. Many roads blocked 12 to 24 hours by high water and minor landslides; small bridges washed away. Damage to roads and bridges estimated at $305,000. Portions of dozen or more cities and towns inundated as high as ceilings of first floors, causing considerable damage.
Cascade County, Mont.	15-16	4 p. m. 15th—3 p. m. 16th.	.....	.....	1,000	High wind.	Southwest wind, estimated at 75 m. p. h., damaged windows, roofs, chimneys, and small buildings.
Helena, Mont.	16-17	10 a. m. 16th—5:30 a. m. 17th.	.....	.....	5,000	do.	Maximum velocity of 49 m. p. h. on 17th, set a new record for February. Peak gust of 74 m. p. h. on 16th.
North Dakota, entire State.	18	Afternoon and night.	.....	2	20,000	High wind and blowing snow.	Storm most severe in northwestern portion. Highways blocked, and some damage to farm buildings. Two farmers, lost in storm, were frozen to death.
Beckham County, Okla.	19	10:30 a. m.	.....	.....	1,000	High wind.	Gust of wind demolished high school gymnasium under construction at Elk City.
Milwaukee, Wis.	19	11 a. m.—6 p. m.	.....	1	51,000	Wind.	Steel framework of warehouse under construction collapsed, killing 1 workman and injuring 3 others. Several plate glass windows broken, utility service disrupted, and 4 persons injured in city.
Minnesota.	19	.....	.....	.....	25,000	do.	Considerable minor damage to property and trees. Traffic seriously delayed by snow drifts and poor visibility in northern and western portions. Storm accompanied by light snow and cold wave.
Near Sumter on Wateree River, S. C.	21	Afternoon.	.....	3	.....	do.	Three fatalities from drowning as boat was upset by wind.
Burley, Idaho.	22	do.	.....	.....	.....	Windstorm.	Barn blown down, killing 1 cow; 8 other cows injured and had to be destroyed.
California, southern portion.	22-24	.....	.....	.....	.....	Wind.	Winds up to 80 m. p. h. struck many sections, including the Mojave Desert. Trees uprooted, signs and fences blown down, windows broken, and power lines severed.
Douglas, Ariz.	23	11:14 a. m.-3 p. m.	.....	.....	2,000	High winds.	Gusty winds from 50 to 60 m. p. h., toppled several garages and fences, uprooted trees, broke power lines, damaged roofs, and smashed plate glass windows.
Rotan, Tex., and vicinity.	26	5:30 p. m.	Narrow	.....	3,000	Wind.	Private hangar and several roofs damaged.
Roscoe, Tex., and vicinity.	26	7 p. m.	[1] 25	.....	3,000	do.	Barns, houses, and windmills damaged.
Mertzon, Tex., and vicinity.	26	7:30 p. m.	440	.....	1,350	Hail and wind.	Roofs and garages damaged: lambs killed by hail.
San Angelo, Tex., and vicinity.	26	7:52 p. m.	[1] 30	.....	75,000	Wind.	Radio tower blown over; plate glass windows broken; utility lines blown down; 12 planes at Goodfellow Field damaged.
Kerrville, Tex., and vicinity.	26	8:30 p. m.	200	.....	3,000	do.	Fruit trees uprooted, fencing destroyed, poultry killed, and chimneys blown down.
Ballinger, Tex., and vicinity.	26	do.	[1] 3	0	100,000	Tornado, hail, and wind.	Bruce Field hangar destroyed; 8 planes damaged.
Mason, Tex., and vicinity.	26	9:20 p. m.	[1] 20	.....	10,000	Wind.	Windmills damaged, trees blown down, and metal roofing torn.
Comanche, Tex., and vicinity.	26	10 p. m.	[1] 2	.....	30,000	do.	Plate glass broken and roofs damaged.
Ranger, Tex., and vicinity.	26	do.	Narrow	2	.....	Tornado.	One home destroyed; 1 barn unroofed; filling station and store damaged.
Woodson, Tex., and vicinity.	26	10:25 p. m.	200	0	75,000	do.	32 homes damaged, with 7 completely destroyed.
Lewisville, Tex., near.	26	Evening.	Narrow	1	.....	do.	A woman, pinned in wreckage of her home, burned to death. Storm occurred about 7 miles west of Lewisville in Bartonville community.
Itasca, Tex., and vicinity.	27	12:15 a. m.	100	.....	7,500	Wind.	Unroofed an ice factory; destroyed front on 4 brick store buildings; windows broken in residences.
Bloomington, Ind.	27	5 p. m.	.....	.....	3,000	do.	Trees down; minor damage to buildings.
Centerton, Ind.	27	5:30 p. m.	30	0	10,000	Tornado.	Path 1 mile long.
Knox County, Ind.	27	.....	.....	.....	2,000	Wind.	Trees and barns damaged.
Minnesota, west-central, central, and east-central counties.	27-28	.....	[1] 90	.....	100,000	Glaze, sleet, snow, and wind.	Many poles, wires, and power lines down, causing communication and electric services and traffic to be seriously disrupted. Many side roads blocked by snowdrifts. Thickness of ice and snow on wires, ¼ to 3 inches in diameter. High winds contributed greatly to damage. Heaviest snow and ice formation from North Dakota border southeastward to Willmar and Glencoe, then eastward to Wisconsin border. Length of path, 200 miles. Estimated that about 4,172 wire breaks occurred and about 529 poles fell.
South Dakota, south-central and northeastern portions.	27-28	.....	.....	.....	18,000	Rain, sleet, and heavy snow.	Rain turning to sleet and rather heavy snow damaged telephone lines badly. Transportation interrupted.
Santee Cooper Lake, S. C.	28	Afternoon.	.....	3	.....	Wind.	Three fatalities from drowning as boat was upset by winds.
Ohio, entire State.	28	.....	.....	.....	.....	High winds.	Damage, mostly of minor nature, to trees, public utility lines, and small buildings.

[1] Miles instead of yards.

LATE STORM REPORTS FOR JANUARY 1948

[The table hereunder contains such data as were received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Hawaiian Islands	23–25					Rain and high wind.	Some damage on Islands of Maui and Molokai, chiefly due to flooding. Greatest damage on Island of Oahu, where roads and streets were damaged by washing; hundreds of trees blown down or mutilated, and many buildings suffered minor roof and plate glass damage. Several small planes swept loose from moorings and severely damaged; regular plane schedules disrupted. Power lines broken. Over 1,000 phones put out of order. Wind reached extreme velocity of 62 m. p. h., on 24th. Cumulative damage at innumerable points estimated by press as high as $250,000.
Anna Maria Island, Fla.	24	3:15 a. m.		0	$25,000	Tornado	Occurred in connection with squall line ahead of cold front. Damage to several dwellings on island; heavy damage to packing house near Rubonia on mainland in Manatee County.
Laupahoehoe and vicinity, Island of Hawaii.	30					Heavy rain	Highway traffic blocked by landslide. Damage to roads and buildings, and to fields by erosion, estimated $25,000. Rainfall within 4-hour period, 11 inches.

SOLAR RADIATION DATA FOR FEBRUARY 1948

[Solar Radiation Investigation Section, I. F. HAND in Charge]

Explanation of Tables 1 and 2 and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, are given in the MONTHLY WEATHER REVIEW, vol. 72, No. 1, January 1944, p. 43. A list of pyrheliometric stations is given on page 45 of that issue. An explanation of the formula used in computing the air mass values for each station listed in Table 1 appears in vol. 75, No. 3, March 1947, p. 47.

Table 3 gives values of solar and sky radiation plus radiation reflected from the ground as received on a vertical surface facing south for the current month; this table was first included in the solar radiation data for the January 1948 issue of the REVIEW. In that issue, also, back data for the south vertical surface were published, covering the period from March 26, 1945, to January 1948.

Table 4 gives values of solar and sky radiation plus radiation reflected from the ground as received on a vertical surface facing east. This table covers the period from March 26, 1945, to September 15, 1946; on the latter date east vertical surface observations were discontinued.

TABLE 1.—*Solar radiation intensities during February 1948*

[Gram calories per minute per square centimeter of normal surface]

Date	Sun's zenith distance									Vapor pressure	
	A. M.				0.0°	P. M.					
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°	7:30 a. m.[1]	1:30 p. m.[1]
MADISON, WIS.											
	Air mass										
	4.81	3.84	2.88	1.92	*0.96	1.92	2.88	3.84	4.81		
February	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*	*mb.*
2	0.74	1.06	1.18	1.39	1.60	.....	.....	.....	.....	3.7	1.6
4	.....	.....	.....	.98	.....	.....	.....	.....	.....	1.3	2.3
6	.54	.73	.87	.....	.....	.....	.....	.....	.....	1.2	1.7
12	.69	.88	1.06	.....	.....	.....	.....	.....	.....	1.0	1.2
17	.75	.98	1.11	1.16	1.36	.....	.....	.....	.....	4.8	6.4
20	.96	1.08	1.21	1.42	1.66	.....	.....	.....	.....	1.0	1.5
21	.....	.....	.....	1.37	1.61	1.35	.....	.....	.....	1.4	2.2
26	.75	.90	1.04	1.25	1.49	.....	.....	.....	.....	4.8	5.6
Means	.74	.94	1.08	1.26	1.54	(1.35)	.....	.....	.....	.....	.....
Departures	−.11	−.06	−.06	−.07	+.03	+.03	.....	.....	.....	.....	.....
LINCOLN, NEBR.											
	Air mass										
	4.77	3.81	2.86	1.91	*0.95	1.91	2.86	3.81	4.77		
February	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*	*mb.*
9	.....	0.83	1.02	1.22	.....	1.20	.....	.....	.....	1.4	2.2
16	0.86	1.02	1.14	1.31	.....	1.31	1.18	.....	.....	5.6	7.2
17	.83	.96	1.11	.....	.....	.....	.....	.....	.....	5.6	8.1
28	.94	1.05	1.12	1.29	.....	.....	.....	.....	.....	4.2	4.4
Means	.88	.96	1.10	1.27	.....	(1.26)	(1.18)	.....	.....	.....	.....
Departures	−.02	−.05	−.05	−.08	.....	−.07	−.03	.....	.....	.....	.....
CLIMAX, COLO.											
	Air mass										
	3.24	2.59	1.94	1.29	*0.65	1.29	1.94	2.59	3.24		
February	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*	*mb.*
2	.....	.....	.....	.....	.....	1.56	1.44	1.32	.....	.....	.....
4	.....	.....	.....	1.46	.....	1.59	.....	.....	.....	.....	.....
5	.....	.....	1.45	1.57	.....	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	1.58	.....	1.56	1.39	1.26	1.18	.....	.....
14	.....	.....	.....	1.53	.....	.....	.....	.....	.....	.....	.....
15	.....	.....	.....	1.54	.....	1.53	1.38	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	1.39	.....	.....	.....	.....
17	.....	.....	1.37	1.55	.....	.....	.....	.....	.....	.....	.....
26	.....	.....	.....	1.56	.....	.....	.....	.....	.....	.....	.....
Means	.....	.....	(1.41)	1.54	.....	1.56	1.40	(1.29)	(1.18)	.....	.....
Departures	.....	.....	−.05	−.03	.....	.00	.02	−.02	−.04	.....	.....

TABLE 1.—*Solar radiation intensities during February 1948*—Con.

[Gram calories per minute per square centimeter of normal surface]

Date	Sun's zenith distance									Vapor pressure	
	A. M.				0.0°	P. M.					
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°	7:30 a. m.[1]	1:30 p. m.[1]
TABLE MOUNTAIN, CALIF.											
	Air mass										
	3.76	3.01	2.26	1.51	*0.75	1.51	2.26	3.01	3.76		
February	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*	*mb.*
1	.....	.....	.....	1.52	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	1.53	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	1.46	.....	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	1.50	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	1.55	.....	.....	.....	.....	.....	.....	.....
12	1.21	1.30	1.41	1.56	.....	.....	.....	.....	.....	.....	.....
15	.....	.....	.....	1.52	.....	.....	.....	.....	.....	.....	.....
20	.....	.....	.....	1.52	.....	.....	.....	.....	.....	.....	.....
26	1.16	1.25	1.35	1.48	.....	.....	.....	.....	.....	.....	.....
27	1.25	1.34	1.44	1.55	.....	.....	.....	.....	.....	.....	.....
Means	1.21	1.30	1.40	1.52	.....	.....	.....	.....	.....	.....	.....
Departures	+.02	+.02	+.02	+.02	.....	.....	.....	.....	.....	.....	.....
BOSTON, MASS.											
	Air Mass										
	4.96	3.96	2.97	1.98	*0.99	1.98	2.97	3.96	4.96		
February	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*	*mb.*
3	.....	0.81	0.65	1.29	.....	1.22	.....	.....	.....	2.3	1.9
5	.....	.....	.....	.76	.....	1.18	.....	0.26	0.22	2.1	2.6
6	.....	.....	.47	.41	.....	.....	.....	.....	.....	2.5	2.2
9	.....	.97	.97	1.16	.....	1.15	0.81	.85	.81	1.3	1.1
16	.....	.....	.74	.....	.....	.....	.....	.....	.....	2.6	3.5
18	0.65	.83	.98	.....	.....	.....	.....	.....	.....	3.8	3.7
Means	(0.65)	.87	.76	.90	.....	1.18	(0.81)	(0.56)	(0.52)	.....	.....
Departures	+.01	+.10	−.11	−.19	.....	+.04	−.20	−.19	−.10	.....	.....
BLUE HILL, MASS.											
	Air mass										
	4.86	3.89	2.92	1.94	*0.97	1.94	2.92	3.89	4.86		
February	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*	*mb.*
1	1.05	.....	.....	.....	.....	.....	.....	.....	1.00	1.3	2.6
2	.....	1.13	.....	.....	.....	.....	.....	.....	.....	2.7	3.0
3	.....	1.14	1.23	.....	.....	1.38	.....	.....	.....	1.9	1.7
7	.88	.99	.....	.....	.....	.....	.....	.....	.....	1.4	2.3
8	.....	.56	.56	.....	.....	1.30	1.01	0.80	.72	3.6	2.1
9	.....	.....	1.26	1.41	.....	1.39	1.26	1.11	1.02	.8	.9
14	.....	.....	.....	.....	.....	.....	.....	.95	.85	11.8	8.9
15	1.05	1.16	1.27	1.47	.....	1.41	1.26	1.13	1.01	1.3	1.9
18	.....	.....	.....	.....	.....	.....	1.11	.98	.82	3.5	3.5
21	.99	1.07	1.18	.....	.....	1.18	.....	.83	.73	1.8	1.8
23	.....	.....	.....	.....	.....	.....	.....	.....	.89	1.6	1.8
27	.....	.....	.....	.97	.....	.....	.....	.....	.....	4.2	4.4
Means	.99	1.01	1.10	1.28	.....	1.33	1.16	.97	.88	.....	.....
Departures	+.08	−.01	.00	−.01	.....	+.04	+.02	−.03	−.02	.....	.....
RATIO, BOSTON / BLUE HILL ON COMPARABLE DATES											
		(0.71)	(0.65)	(0.82)	.....	(0.88)	.....	.....	.....	.....	.....

*Extrapolated.
[1] 75th meridian time.

TABLE 2.—*Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface during February*

[Gram calories per square centimeter]

Date	Washington, D. C	Madison, Wis.	Lincoln, Nebr.	New York, N. Y.	Fresno, Calif.	Fairbanks, Alaska	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Newport, R. I.	Salt Lake City, Utah	Fut-in-Bay, Ohio	St. College, Pa.	Davis, Calif.	Toronto, Canada	Ithaca, N. Y.	Boulder, Colo.	East Wareham, Mass.	Honolulu, Hawaii	Pearl Harbor, Hawaii	East Lansing, Mich.
1948	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
Jan. 29	224	235	298	230	303	39	328	99	112	256	310	208	174	281	229	275	244	273	103	118	299	232	280	463	207
Jan. 30	147	201	106	252	300	47	62	265	68	187	275	305	296	323	198	234	246	291	231	152	293	307	292	435	297
Jan. 31	253	201	188	284	306	29	300	243	49	256	306	342	311	316	254	298	257	289	240	233	216	291	499	482	242
Feb. 1	248	192	308	179	303	10	286	215	109	221	281	303	232	264	176	130	282	317	114	247	268	173	448	460	204
Feb. 2	291	297	120	188	351	28	296	216	277	85	226	354	239	282	191	261	161	194	100	189	106	269	390	416	235
Feb. 3	247	91	60	265	352	50	31	257	100	254	316	401	314	331	124	258	269	328	239	205	211	300	465	400	198
Feb. 4	12	250	259	28	294	9	54	59	40	278	318	367	64	73	282	88	51	77	64	90	290	82	379	456	223
Means	203	210	191	204	316	30	194	193	108	220	290	339	233	267	208	221	216	250	156	176	240	236	393	444	229
Departures	−1	+25	−22	+28	+119	−7	−18	+11	−75	+31	+10	+88	+17	+50	+1	+60	+64	+60	+13	+15	−2	+14	----	----	+82
Feb. 5	186	179	152	199	205	24	41	225	35	69	99	104	285	292	104	264	248	102	193	256	292	173	509	482	263
Feb. 6	205	273	47	71	273	47	340	158	141	107	284	197	205	237	82	279	190	140	212	228	206	221	379	334	230
Feb. 7	52	115	278	198	271	72	60	229	48	299	365	425	290	303	308	110	137	350	82	162	201	312	137	121	136
Feb. 8	194	319	333	280	374	74	392	230	49	82	383	421	281	292	----	357	340	174	280	208	361	280	453	425	326
Feb. 9	175	291	309	241	299	60	375	277	58	119	375	386	337	353	183	320	342	59	208	277	338	335	435	387	321
Feb. 10	356	216	78	238	414	12	199	246	328	260	228	205	278	290	285	308	305	375	263	286	154	224	488	360	262
Feb. 11	87	118	246	81	376	10	26	163	72	340	395	451	250	264	282	69	42	387	61	96	168	253	540	459	99
Means	179	216	206	187	316	43	205	218	104	182	304	313	275	290	207	244	229	227	186	216	246	257	420	367	234
Departures	−33	+12	−42	+13	+59	−13	−29	+38	−68	−16	−16	+12	+51	+70	−17	+70	+71	−24	+25	+42	−21	+40	----	----	+65
Feb. 12	97	260	129	149	405	72	52	221	19	332	375	459	234	203	310	298	52	382	214	163	266	198	262	332	272
Feb. 13	31	125	259	44	365	96	52	121	41	210	375	343	176	146	237	34	17	283	23	44	347	190	440	498	70
Feb. 14	283	315	188	115	255	105	418	88	246	265	326	391	107	63	174	229	159	311	213	79	386	62	298	492	211
Feb. 15	364	239	342	361	388	96	369	328	338	160	297	374	367	380	121	296	295	122	226	----	----	362	533	529	244
Feb. 16	135	279	361	166	364	132	376	179	240	289	293	350	253	307	296	252	276	369	162	143	368	295	472	503	259
Feb. 17	316	298	353	216	167	97	391	172	304	272	254	280	192	109	195	322	345	233	318	270	332	119	550	514	251
Feb. 18	381	250	268	306	243	136	262	294	264	52	248	397	350	351	88	304	308	130	218	225	377	321	491	412	250
Means	230	252	271	194	312	105	274	200	207	226	310	370	240	222	203	248	207	261	196	154	346	221	438	469	222
Departures	0	+24	+14	−2	+22	+33	+18	+6	−14	−29	−11	+50	+1	−26	−35	+12	+24	−19	+13	−36	+72	−13	----	----	+3
Feb. 19	281	304	297	219	88	----	266	159	157	242	324	261	236	309	286	184	275	309	97	167	33	280	475	449	143
Feb. 20	200	353	183	196	388	131	341	176	329	301	309	265	222	166	302	368	284	374	322	221	87	178	569	379	250
Feb. 21	367	348	352	288	356	107	246	308	24	115	252	385	349	352	170	207	302	290	156	257	175	362	441	455	248
Feb. 22	156	168	224	124	258	118	407	83	98	207	203	365	54	106	44	378	376	265	339	319	258	93	528	461	349
Feb. 23	419	162	53	312	466	124	353	353	120	225	419	412	350	381	267	398	429	428	333	297	172	340	468	492	282
Feb. 24	246	41	50	320	437	116	53	295	97	386	396	421	365	386	390	310	392	429	207	276	301	328	543	440	279
Feb. 25	267	207	315	91	456	47	69	92	44	345	394	364	113	92	344	40	62	410	206	49	349	81	192	154	121
Means	277	226	211	221	350	107	248	210	124	260	328	353	241	256	358	269	303	358	237	226	196	237	459	404	239
Departures	+11	−25	−69	−5	+74	+15	−18	−19	−99	−2	−9	+30	−30	−10	+5	+20	+80	+47	+43	+3	−87	−39	----	----	+24
ACCUMULATED DEPARTURES ON FEB. 25, 1948																									
	−567	+854	−273	+210	+3,822	+42	+623	−441	−966	−49	−1,043	+2,071	−476	−28	−917	+1,918	+1,673	+1,309	+1,092	−518	−1,253	−896	----	----	+2,030

TABLE 3.—*Daily totals and weekly means of solar and sky radiation plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass., during February 1948*

Date	29	30	31	1	2	3	4	Mean	5	6	7	8	9	10	11	Mean	12	13	14	15	16	17	18	Mean	19	20	21	22	23	24	25	Mean
Gm. cal/cm²	205	620	626	496	437	562	51	428	450	274	544	485	646	387	265	436	326	134	101	614	307	219	530	319	246	191	535	60	592	497	70	313

TABLE 4.—*Daily totals and weekly means of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass., for the period from March 26, 1945, to Sept. 15, 1946*

[Gram calories per square centimeter]

1945	March		April		May		June		July		August		September		October		November		December	
	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.
First week	--	---	2	63	30	50	4	154	2	186	30	240	3	355	Oct. 1	93	29	123	3	46
	--	---	3	207	May 1	143	5	93	3	306	31	204	4	215	2	27	30	95	4	30
	--	---	4	60	2	268	6	200	4	340	Aug. 1	120	5	298	3	294	31	117	5	84
	--	---	5	58	3	362	7	456	5	300	2	374	6	255	4	305	Nov. 1	236	6	11
	--	---	6	438	4	61	8	304	6	101	3	222	7	267	5	268	2	119	7	8
	--	---	7	366	5	173	9	336	7	377	4	384	8	299	6	88	3	83	8	133
	--	---	8	360	6	284	10	246	8	319	5	412	9	181	7	40	4	1	9	146
Mean	--	---	--	222	--	192	--	256	--	275	--	279	--	267	--	160	--	110	--	66
Second week	--	---	9	369	7	250	11	173	9	180	6	101	10	95	8	163	5	75	10	28
	--	---	10	165	8	313	12	358	10	101	7	39	11	98	9	66	6	198	11	184
	--	---	11	220	9	390	13	407	11	320	8	361	12	110	10	275	7	63	12	190
	--	---	12	266	10	53	14	386	12	390	9	362	13	260	11	137	8	132	13	135
	--	---	13	328	11	118	15	386	13	389	10	469	14	171	12	54	9	81	14	39
	--	---	14	350	12	358	16	311	14	84	11	445	15	148	13	262	10	12	15	103
	--	---	15	391	13	58	17	189	15	101	12	444	16	222	14	232	11	18	16	89
Mean	--	---	--	298	--	220	--	316	--	209	--	318	--	168	--	170	--	83	--	110
Third week	--	---	16	166	14	386	18	266	16	84	13	336	17	99	15	216	12	23	17	172
	--	---	17	111	15	384	19	336	17	67	14	199	18	51	16	123	13	25	18	148
	--	---	18	302	16	107	20	82	18	102	15	142	19	94	17	273	14	8	19	10
	--	---	19	351	17	64	21	363	19	138	16	555	20	60	18	239	15	53	20	135
	--	---	20	264	18	30	22	158	20	156	17	495	21	216	19	211	16	62	21	179
	--	---	21	383	19	58	23	396	21	274	18	484	22	318	20	199	17	76	22	102
	--	---	22	380	20	450	24	374	22	290	19	386	23	171	21	256	18	17	23	206
Mean	--	---	--	280	--	211	--	282	--	159	--	371	--	144	--	217	--	38	--	136
Fourth week	--	---	23	433	21	154	25	341	23	96	20	458	24	59	22	81	19	182	24	206
	--	---	24	228	22	359	26	47	24	199	21	282	25	114	23	64	20	26	25	68
	--	---	25	87	23	486	27	94	25	354	22	217	26	92	24	21	21	186	26	28
	--	---	26	74	24	449	28	129	26	119	23	136	27	257	25	16	22	4	27	42
	--	---	27	69	25	388	29	373	27	207	24	35	28	41	26	16	23	153	28	126
	--	---	28	201	26	386	30	223	28	193	25	45	29	212	27	220	24	131	29	7
	--	---	29	172	27	224	July 1	384	29	57	26	178	30	298	28	256	25	87	30	128
																			31	14
Mean	--	---	--	181	--	350	--	227	--	175	--	193	--	153	--	96	--	110	--	78
Fifth week	[1] 26	335	--	---	28	133	--	---	--	--	27	298	--	---	--	---	26	122	--	---
	27	311	--	--	29	236	--	---	--	---	28	289	--	---	--	---	27	178	--	---
	28	296	--	---	30	206	--	---	--	---	29	364	--	---	--	---	28	36	--	---
	29	283	--	---	31	387	--	---	--	---	30	132	--	---	--	---	29	5	--	---
	30	178	--	---	June 1	407	--	---	--	---	31	178	--	---	---	---	30	19	--	---
	31	58	--	---	2	194	--	--	--	---	Sep. 1	134	--	---	--	---	Dec. 1	38	--	---
	Apr. 1	362	--	---	3	128	--	---	--	---	2	63	--	---	--	---	2	71	--	---
Mean	--	261	--	---	--	242	--	---	--	---	--	194	--	---	--	---	--	67	--	---

1946	January		February		March		April		May		June		July		August		September	
	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.	date	cal.
First week	1	165	29	235	26	186	2	99	30	140	4	156	2	112	30	281	3	226
	2	206	30	18	27	37	3	88	May 1	344	5	166	3	355	31	282	4	348
	3	187	31	10	28	140	4	92	2	398	6	432	4	393	Aug. 1	20	5	173
	4	154	Feb. 1	149	Mar. 1	320	5	150	3	424	7	350	5	406	2	59	6	318
	5	150	2	101	2	107	6	311	4	338	8	236	6	169	3	386	7	194
	6	50	3	216	3	292	7	393	5	79	9	---	7	337	4	235	8	75
	7	6	4	260	4	249	8	412	6	359	10	---	8	411	5	139	9	75
Mean	--	131	--	141	--	190	--	221	--	297	--	268	--	312	--	200	--	199
Second week	8	93	5	237	5	165	9	64	7	246	11	235	9	92	6	253	10	79
	9	18	6	33	6	189	10	335	8	96	12	107	10	130	7	21	11	150
	10	128	7	179	7	126	11	343	9	401	13	89	11	136	8	132	12	86
	11	178	8	259	8	224	12	280	10	405	14	422	12	200	9	330	13	195
	12	13	9	38	9	105	13	106	11	60	15	244	13	392	10	188	14	186
	13	184	10	172	10	314	14	345	12	73	16	324	14	374	11	372	[2] 15	247
	14	177	11	205	11	176	15	122	13	288	17	363	15	135	12	183	--	---
Mean	--	113	--	160	--	186	--	228	--	224	--	255	--	208	--	211	--	157
Third week	15	33	12	248	12	324	16	392	14	230	18	82	16	421	13	172	--	---
	16	220	13	70	13	260	17	403	15	50	19	429	17	404	14	36	--	---
	17	53	14	18	14	218	18	368	16	148	20	415	18	377	15	375	--	---
	18	46	15	199	15	54	19	364	17	109	21	156	19	343	16	174	--	---
	19	196	16	---	16	325	20	144	18	58	22	302	20	266	17	201	--	---
	20	92	17	236	17	124	21	413	19	144	23	347	21	72	18	296	--	---
	21	33	18	204	18	232	22	235	20	360	24	382	22	108	19	30	--	---
Mean	--	96	--	162	--	220	--	331	--	157	--	302	--	284	--	184	--	---
Fourth week	22	62	19	185	19	231	23	344	21	88	25	345	23	145	20	254	--	---
	23	240	20	70	20	319	24	78	22	364	26	374	24	319	21	250	--	---
	24	152	21	337	21	334	25	230	23	432	27	340	25	133	22	164	--	---
	25	74	22	---	22	346	26	44	24	437	28	284	26	151	23	37	--	---
	26	67	23	273	23	368	27	39	25	397	29	374	27	353	24	347	--	---
	27	135	24	55	24	346	28	221	26	187	30	218	28	403	25	387	--	---
	28	154	25	273	25	46	29	77	27	71	July 1	144	29	366	26	197	--	---
Mean		126		199		284		148		282		283		267		234	--	---
Fifth week	--	---	--	---	26	271	--	---	28	48	--	---	--	---	27	12	--	---
	--	---	--	---	27	345	--	---	29	136	--	---	--	---	28	350	--	---
	--	---	--	---	28	320	--	---	30	407	--	---	--	---	29	134	--	---
	--	---	--	---	29	323	--	---	31	221	--	---	--	---	30	139	--	---
	--	---	--	---	30	148	--	---	June 1	92	--	---	--	---	31	229	--	---
	--	---	--	---	31	368	--	---	2	38	--	---	--	---	Sep. 1	320	--	---
	--	---	--	---	Apr. 1	341	--	---	3	454	--	---	--	---	2	162	--	---
Mean	--	---	--	---	--	302	--	---	--	199	--	---	--	---	--	192	--	---

[1] Date of first measurements taken at Blue Hill.

[2] Date of last measurements taken at Blue Hill.

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, February 1948

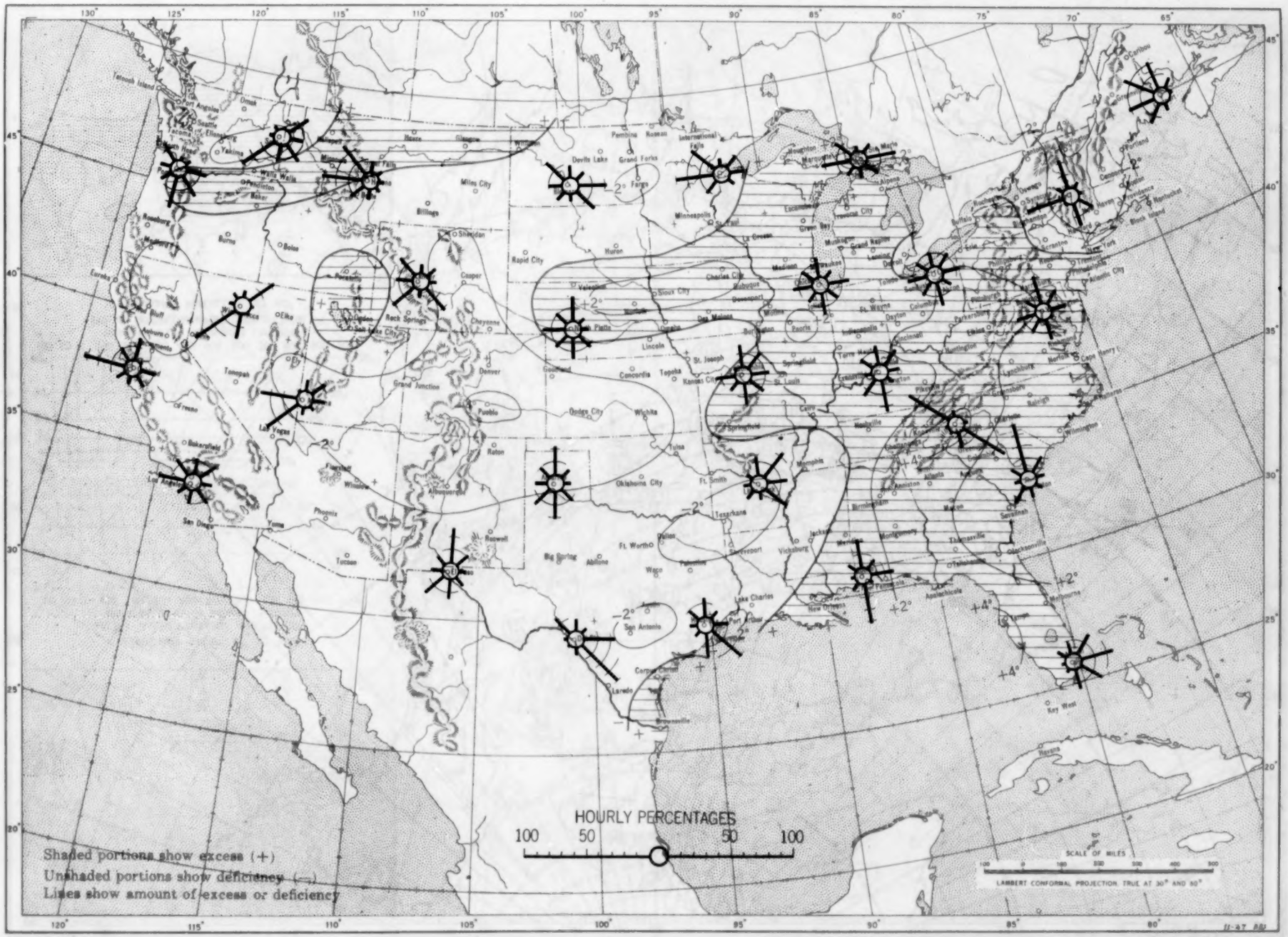
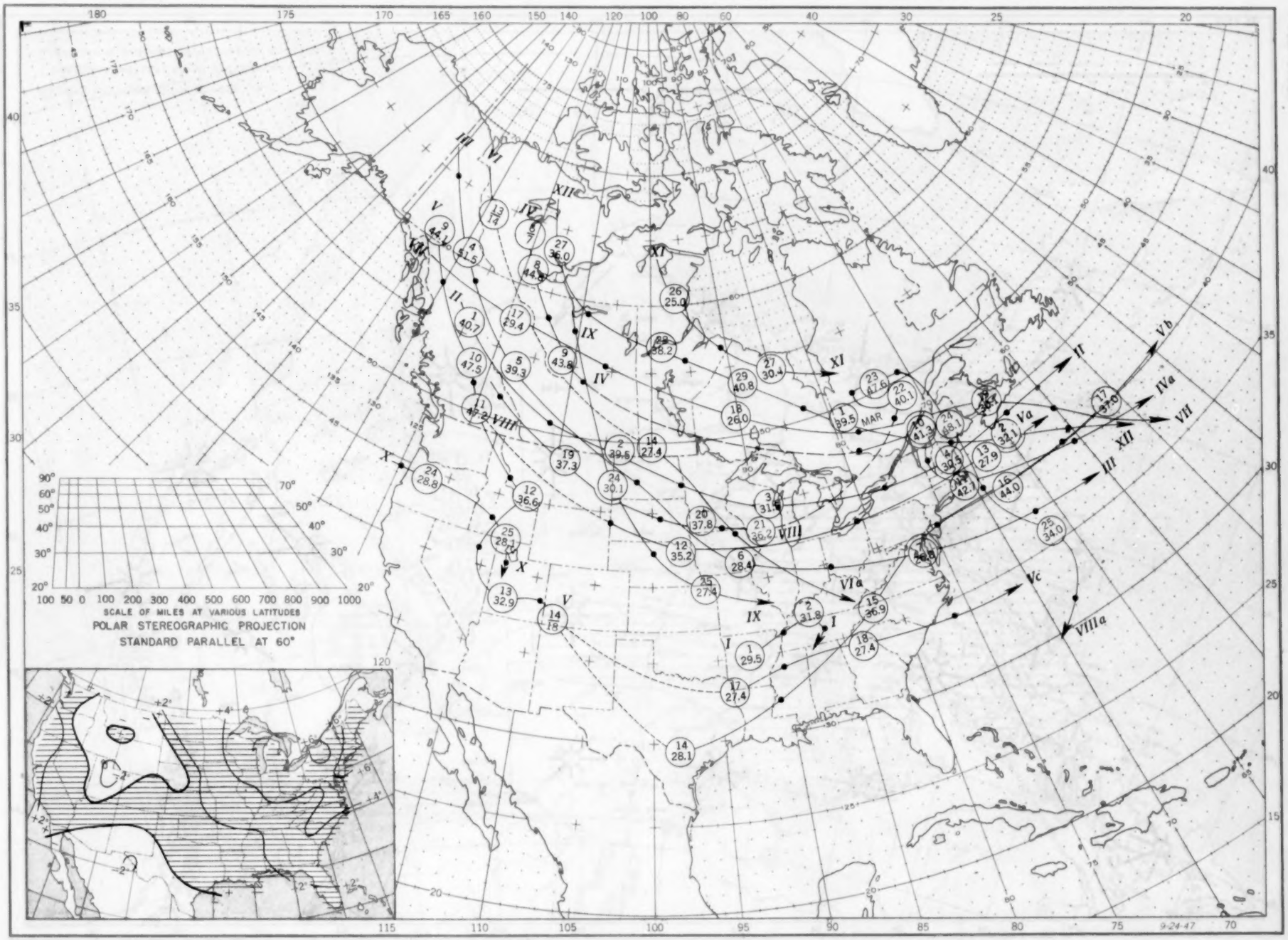

HOURLY PERCENTAGES
100 50 50 100
Shaded portions show excess (+)
Unshaded portions show deficiency (−)
Lines show amount of excess or deficiency
SCALE OF MILES
LAMBERT CONFORMAL PROJECTION, TRUE AT 30° AND 60°

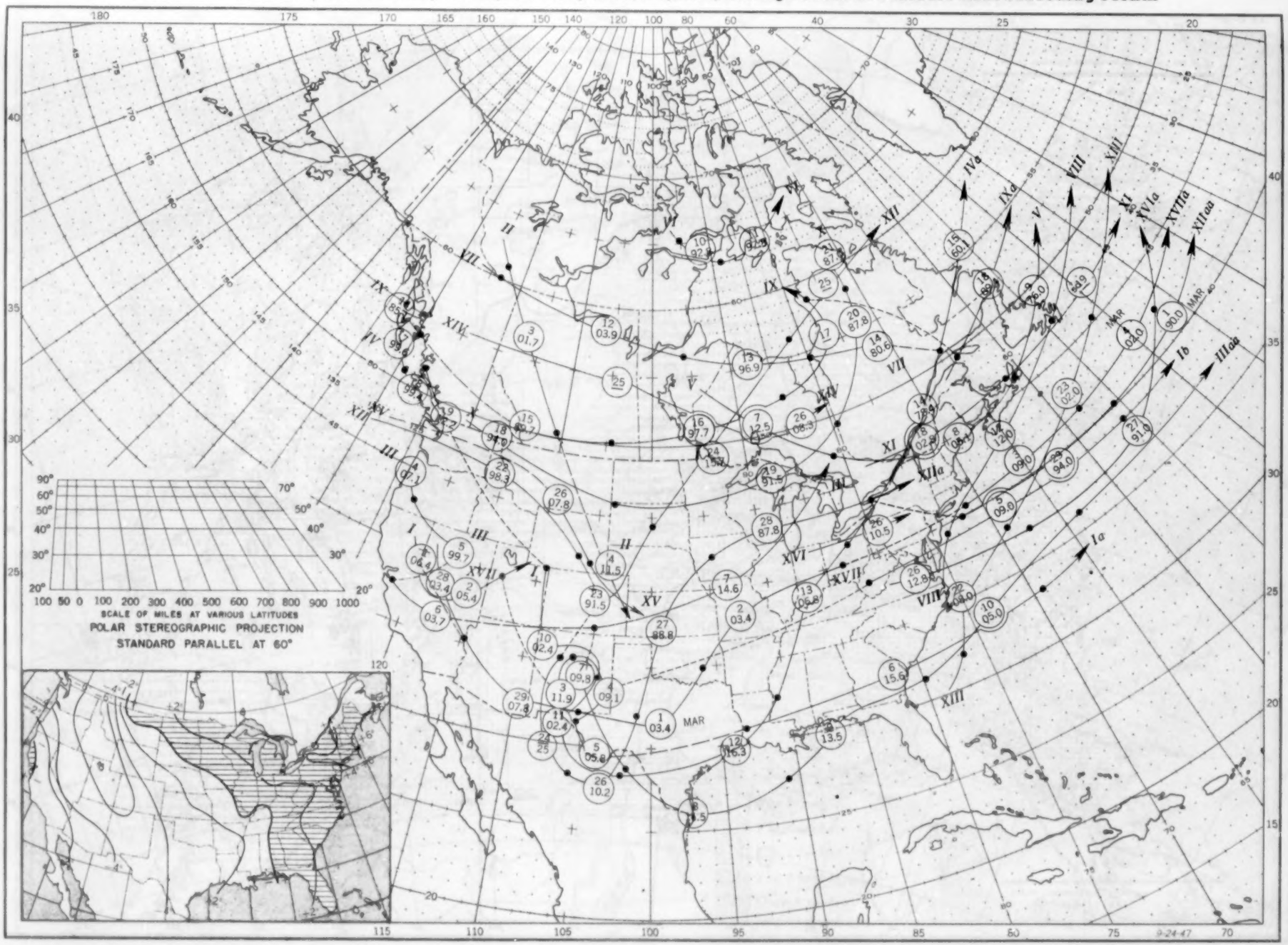
Chart II. Tracks of Centers of Anticyclones, February 1948. (Inset) Departure of Monthly Mean Pressure from Normal



Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, February 1948. (Inset) Change in Mean Pressure from Preceding Month



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time)

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, February 1948

Scale of Shades
Over 70 percent
60 to 70 percent
40 to 50 percent
50 to 60 percent
Under 40 percent
SCALE OF MILES
LAMBERT CONFORMAL PROJECTION TRUE AT 30° AND 60°

Chart V. Total Precipitation, Inches, February 1948. (Inset) Departure of Precipitation from Normal

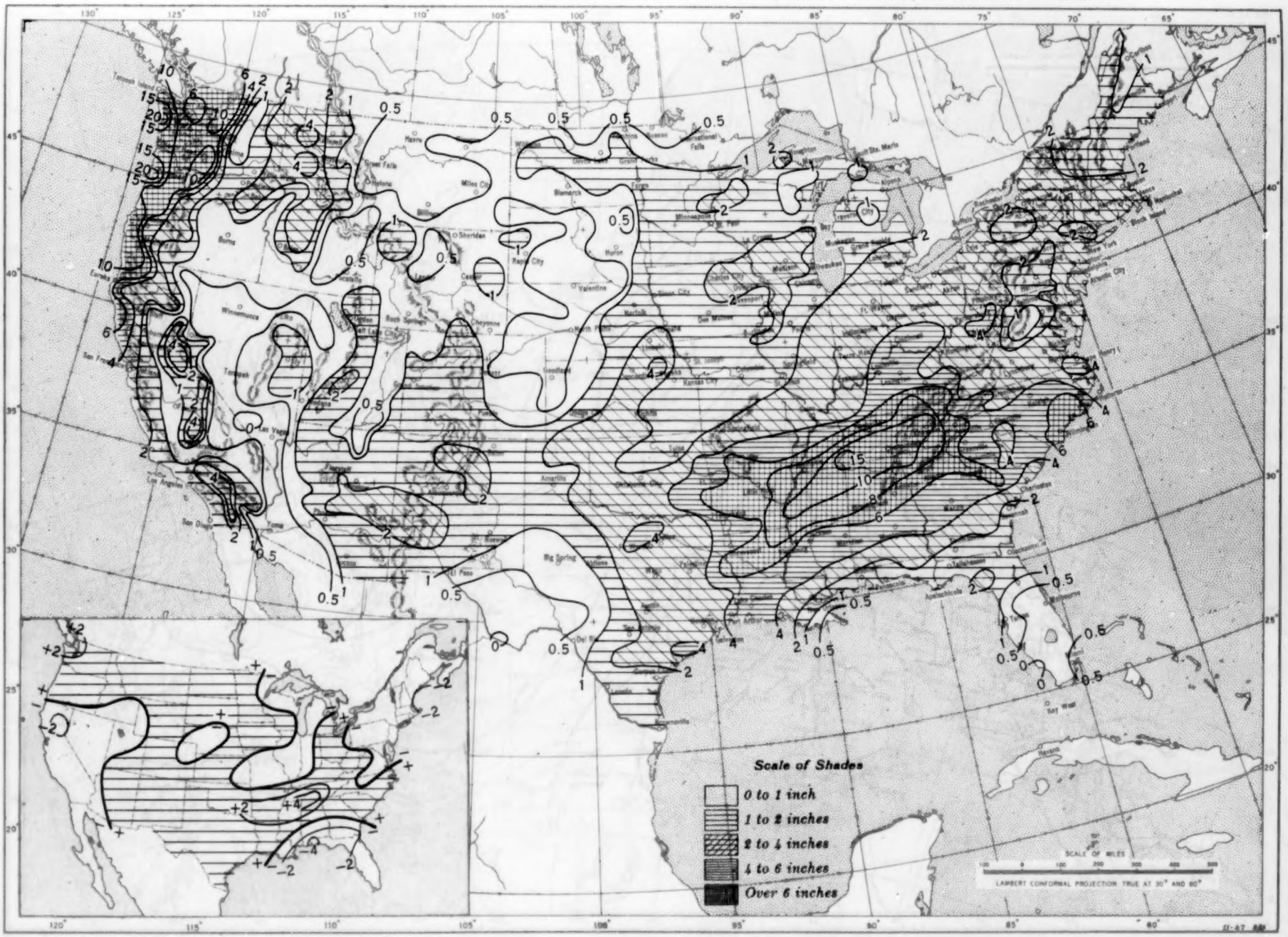

Scale of Shades
0 to 1 inch
1 to 2 inches
2 to 4 inches
4 to 6 inches
Over 6 inches
SCALE OF MILES
LAMBERT CONFORMAL PROJECTION TRUE AT 30° AND 60°

Chart VI. Isobars (mb.) at Sea Level and Isotherms (°F.) at Surface; Prevailing Winds, February 1948

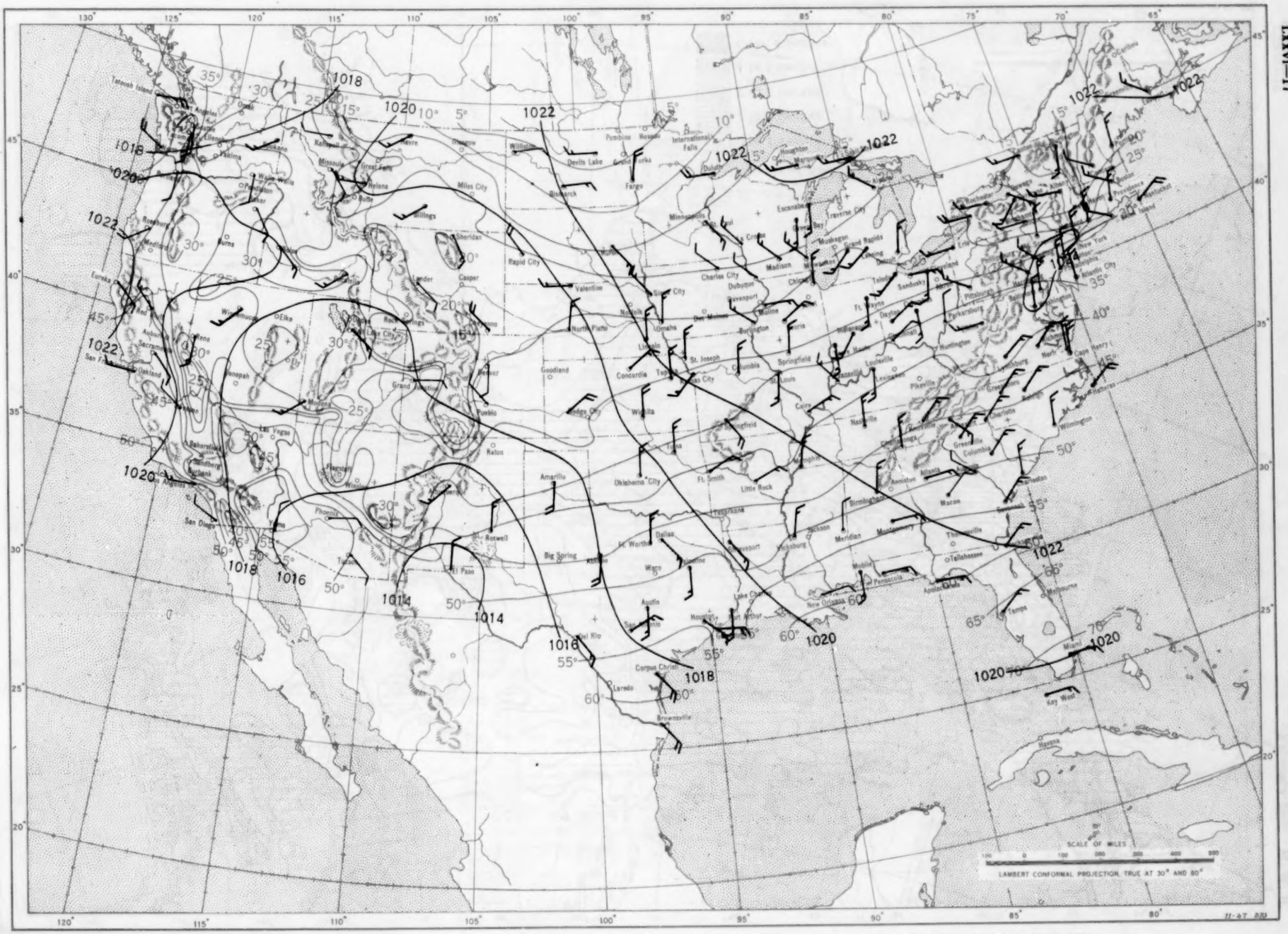
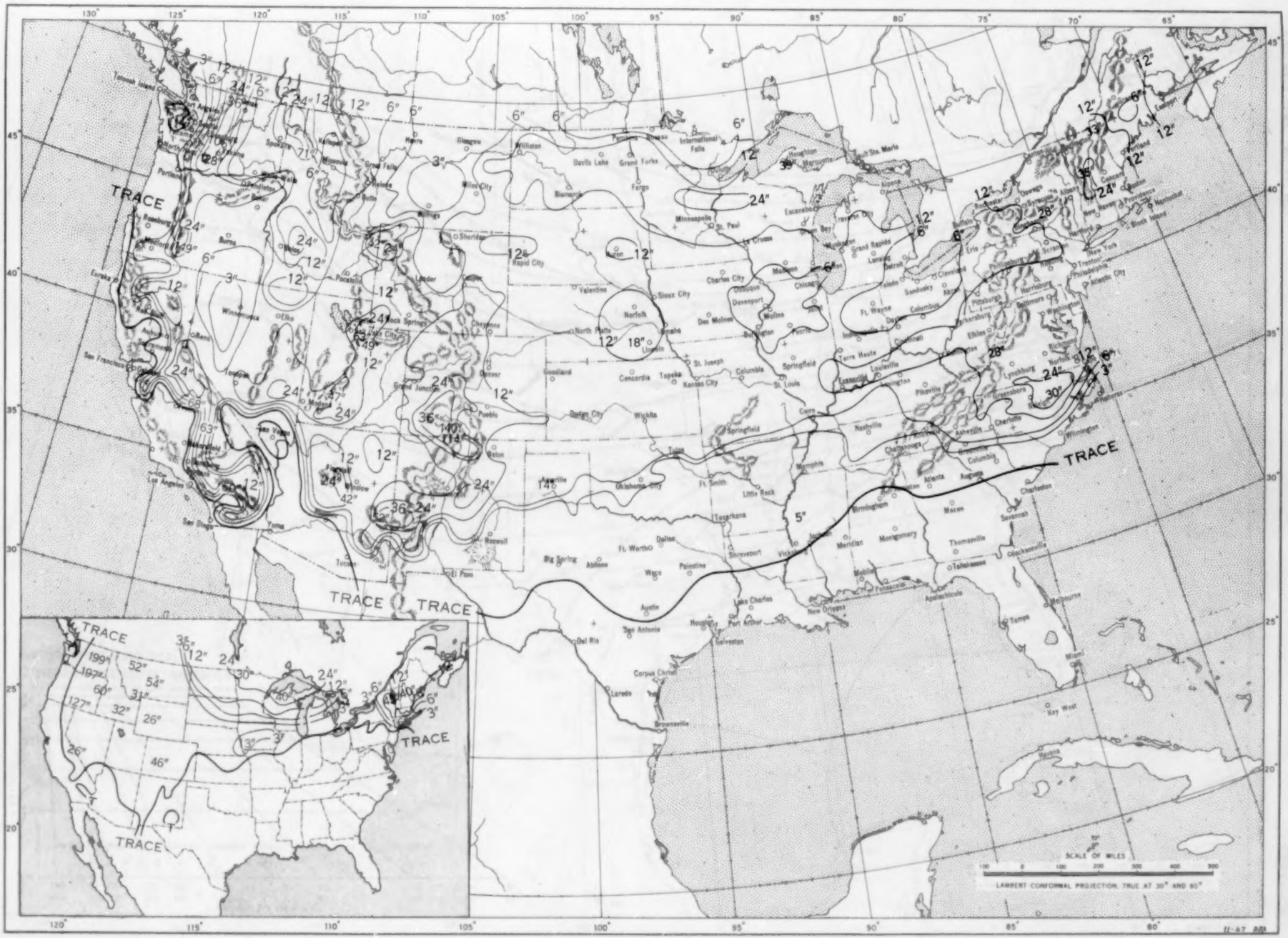


Chart VII. Total Snowfall, Inches, February 1948. (Inset) Depth of Snow on the Ground at 7:30 p. m., March 1, 1948



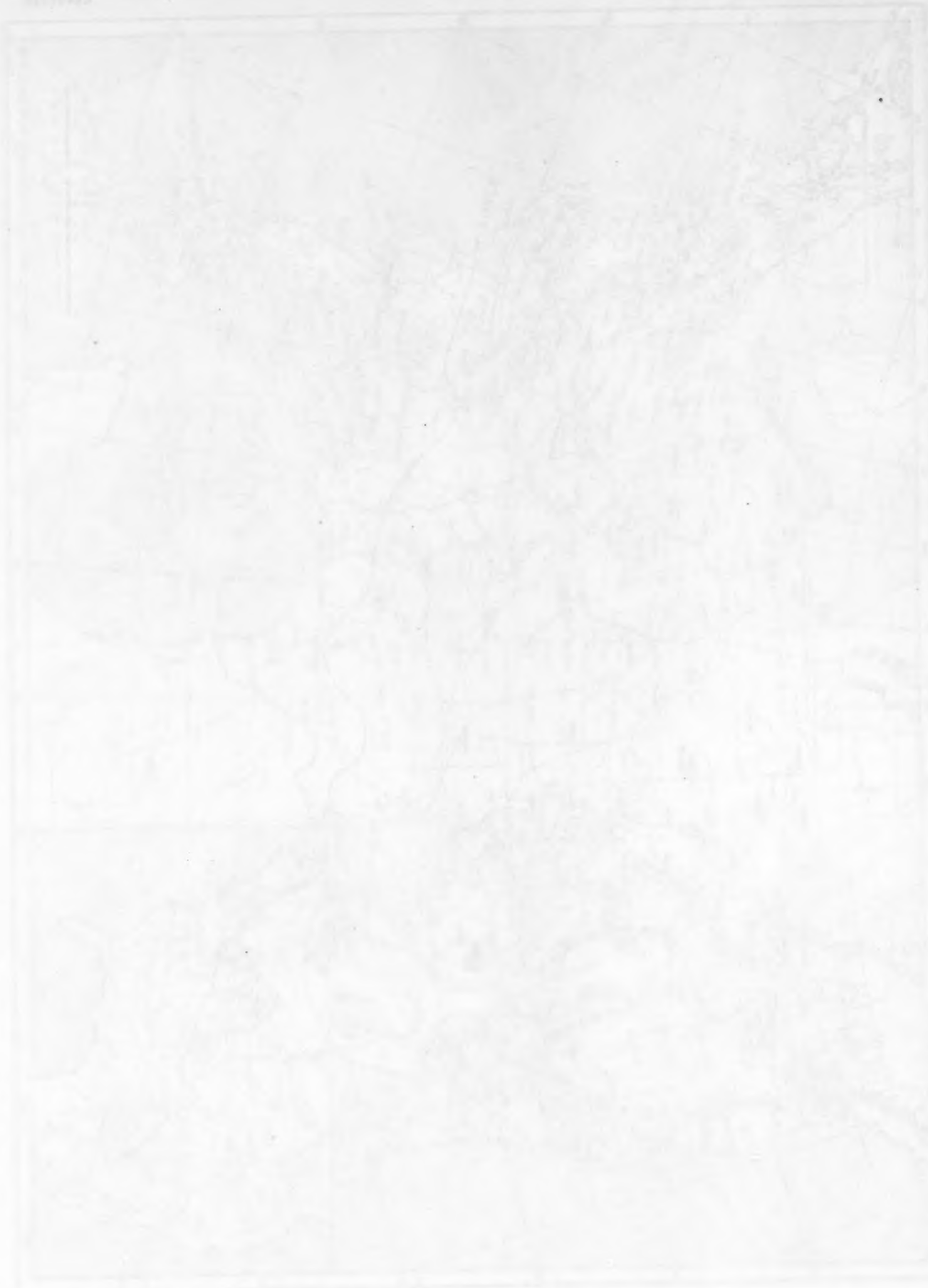
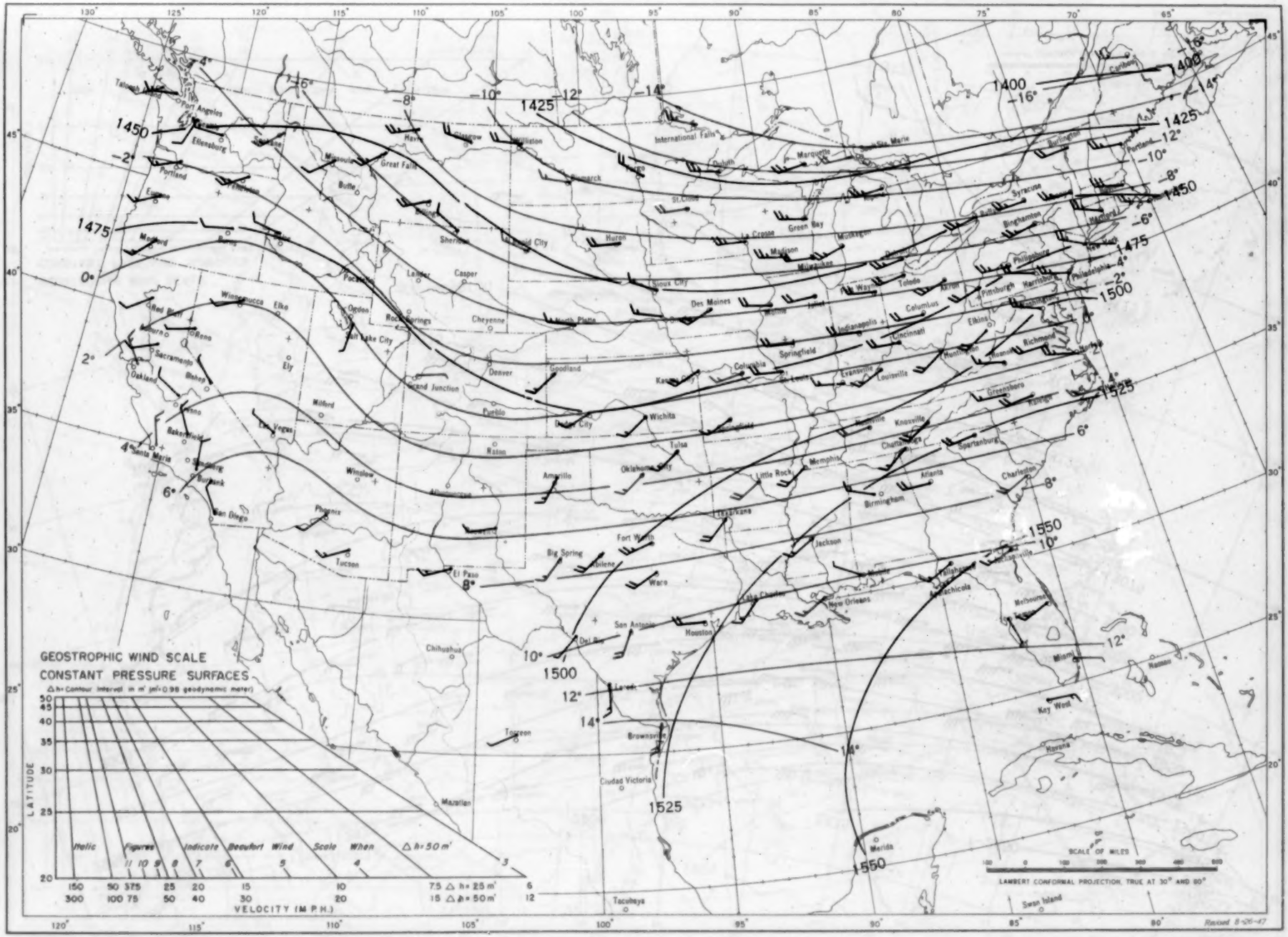
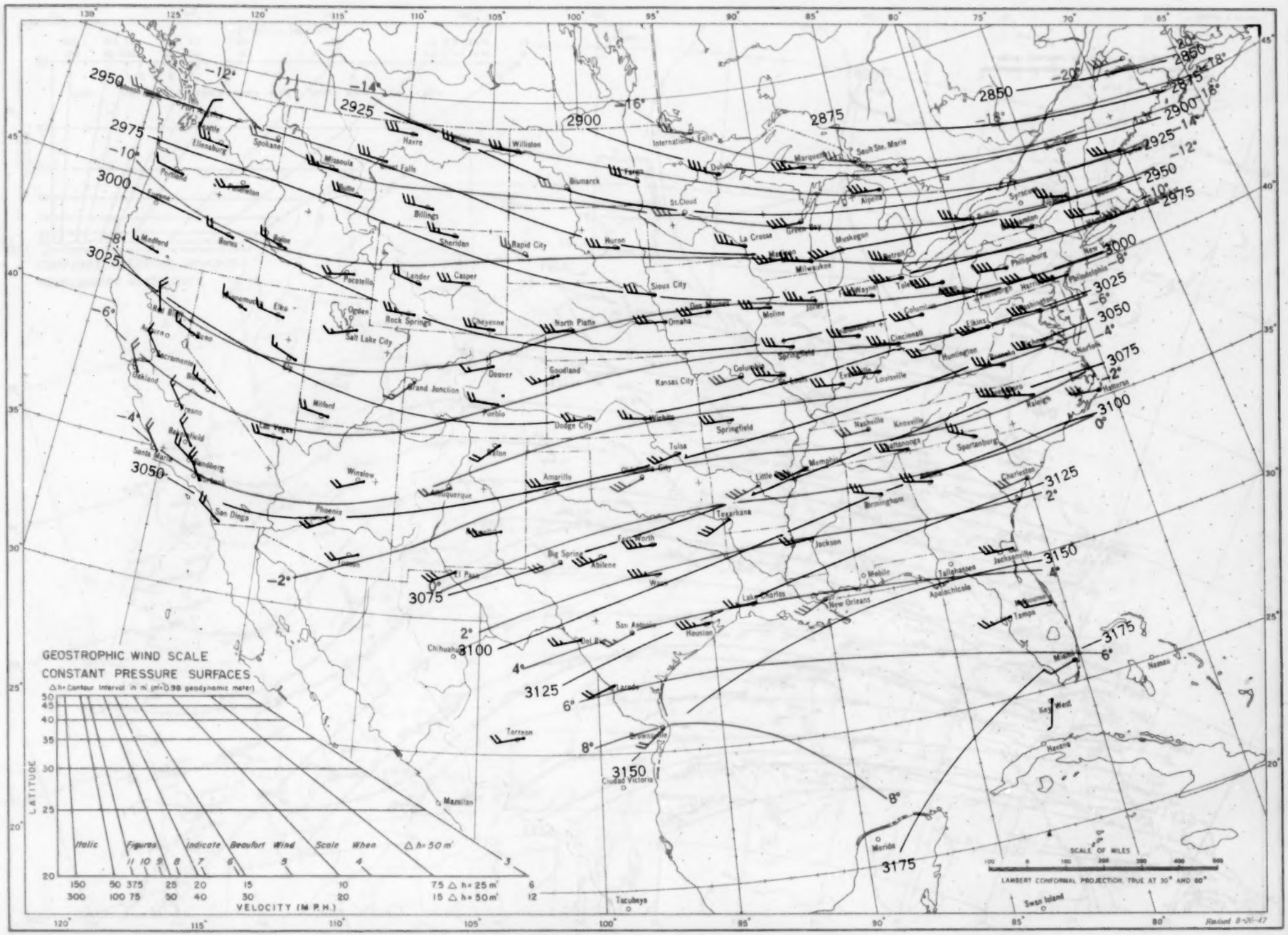


Chart VIII, February 1948. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 850-millibar Pressure Surface, and Resultant Winds at 1,500 Meters (m. s. l.)


GEOSTROPHIC WIND SCALE
CONSTANT PRESSURE SURFACES
Δh=Contour interval in m' (m'=0.98 geodynamic meter)
LATITUDE
Italic Figures Indicate Beaufort Wind Scale When Δh=50 m'
VELOCITY (M.P.H.)
LAMBERT CONFORMAL PROJECTION, TRUE AT 30° AND 60°
SCALE OF MILES
Revised 8-26-47

Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.

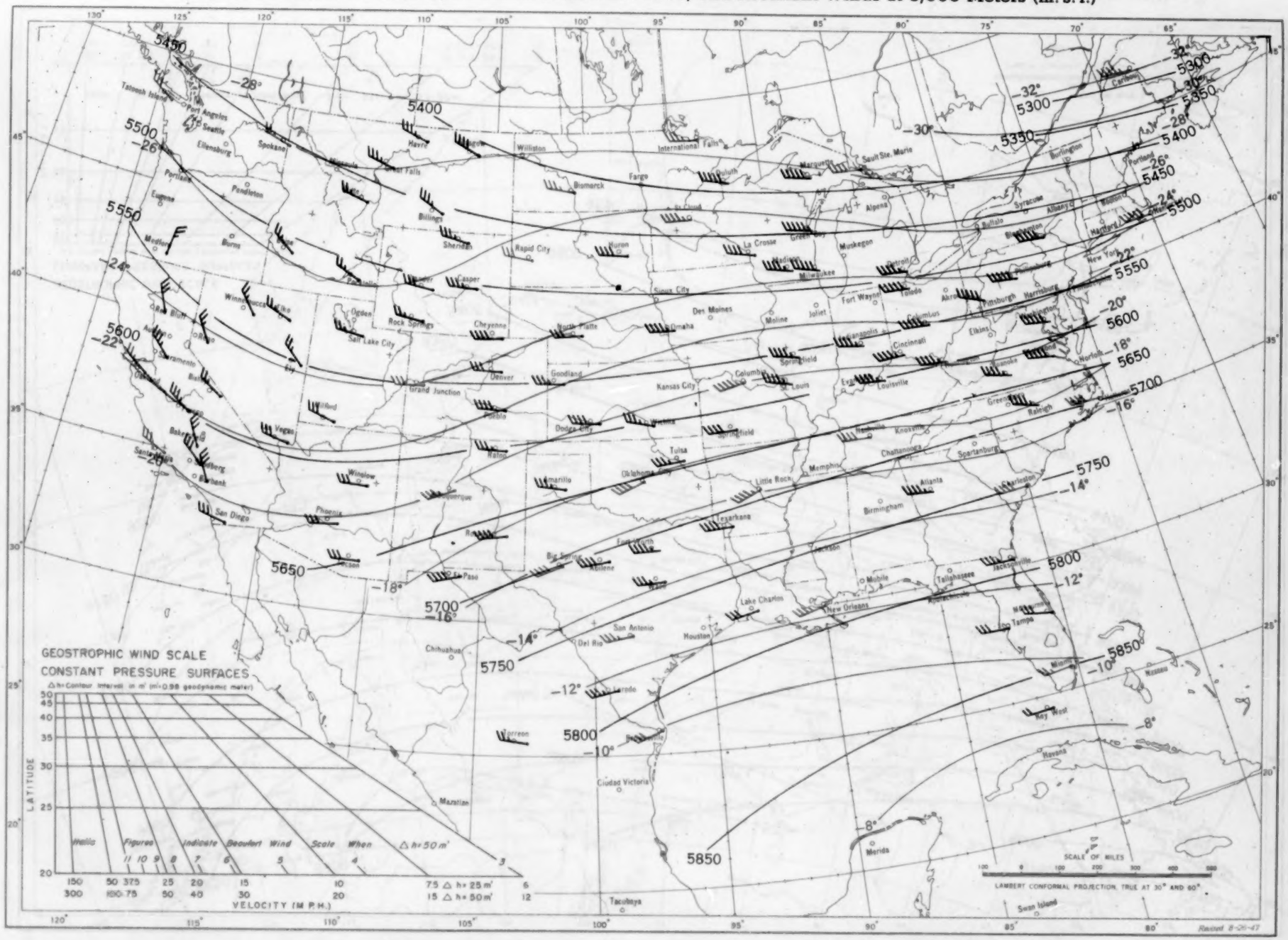
Chart IX, February 1948. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 700-millibar Pressure Surface, and Resultant Winds at 3,000 Meters (m. s. l.)


GEOSTROPHIC WIND SCALE
CONSTANT PRESSURE SURFACES
△h=Contour Interval in m' (m'=0.98 geodynamic meter)
LATITUDE
Italic Figures Indicate Beaufort Wind Scale When △h=50 m'
VELOCITY (M.P.H.)
75 △h=25 m' 6
15 △h=50 m' 12
LAMBERT CONFORMAL PROJECTION. TRUE AT 30° AND 60°
SCALE OF MILES
Revised 8-26-47

Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.

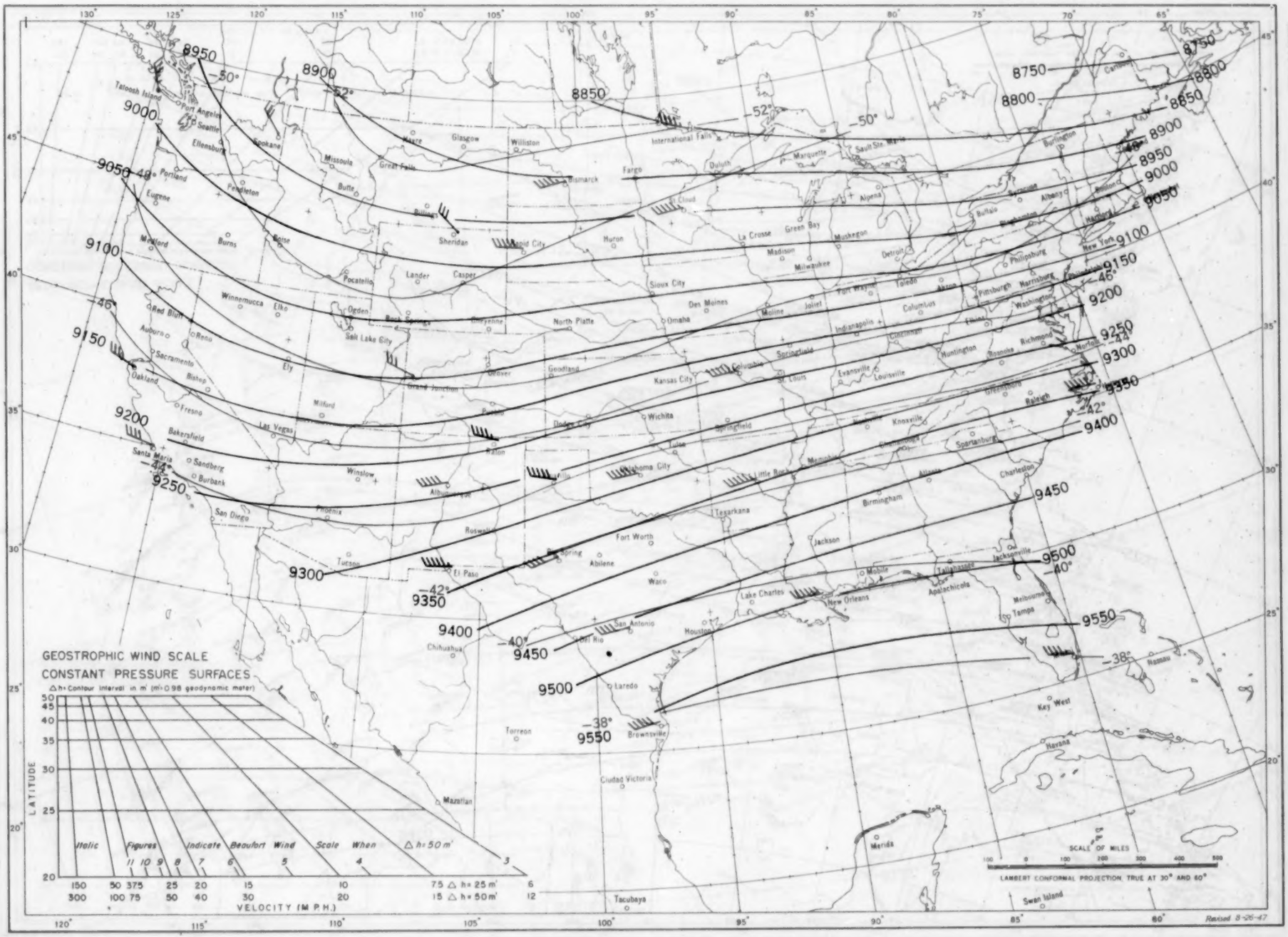
Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.

Chart X, February 1948. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 500-millibar Pressure Surface, and Resultant Winds at 5,000 Meters (m. s. l.)



Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.

Chart XI, February 1948. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 300-millibar Pressure Surface, and Resultant Winds at 10,000 Meters (m. s. l.)



Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.

Contour lines and isotherms based on radiosonde observations at 0300 G. C. T. Winds indicated by black arrows based on pilot balloon observations at 2200 G. C. T.; those indicated by red arrows based on rawins taken at 0300 G. C. T.